

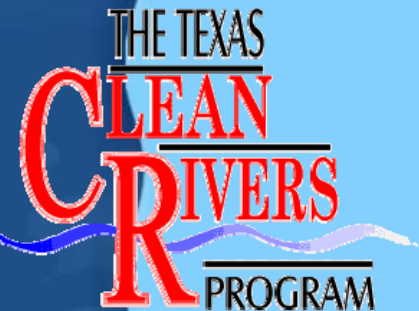
How's the Water?

Upper Rio Grande Basin Advisory Committee Meeting

August 9, 2006

Nancy N. Hanks, Ph.D.

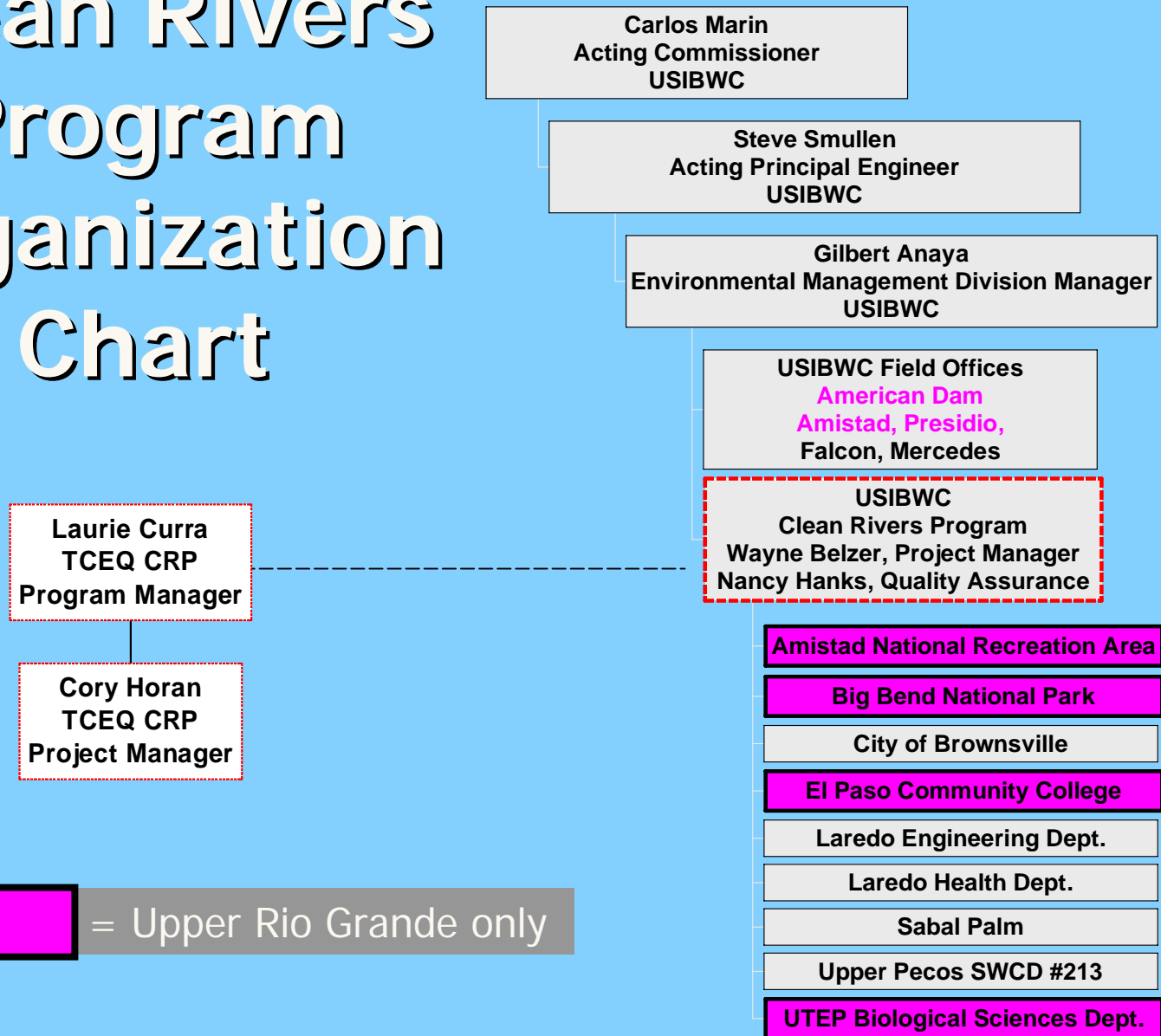
Quality Assurance Officer
Texas Clean Rivers Program



What Do We Do?

- Routine Monitoring of the Upper Rio Grande
 - Fixed locations, regular intervals
 - 24 sites in Upper RG for FY2007
- Collect and report water quality data
- Special Studies
 - Big Bend NPS—5 real-time monitoring stations

Clean Rivers Program Organization Chart



 = Upper Rio Grande only

Monitoring Partners

10 partners in the Upper Rio Grande help monitor, collect, and analyze samples:

- Amistad National Recreation Area (monitoring)
- Big Bend National Park (monitoring and gauges)
- EPCC (monitoring)
- EPWU (lab analysis)
- TCEQ-El Paso (monitoring and gauges)
- UTEP (monitoring)
- USGS (monitoring and gauges)
- USIBWC Field Offices:
American Dam, Presidio, Amistad

Field Data

00010	26	WATER TEMP (deg C only)		
00020	21	AIR TEMP (deg C only)		
00400	8.4	pH (SU)		
00300	6.3	D.O. (mg/L)		
00094	878	SPECIFIC CONDUCTANCE (uS/cm)		
00078	.03	SECCHI DISK (meters)		
72053	3	DAYS SINCE LAST SIGNIFICANT PRECIPITATION		
01351	5	FLOW SEVERITY	1-no flow 3-normal 5-high	2-low 4-flood 6-dry
00061	--	INSTANTANEOUS FLOW (cfs)		

89835	--	FLOW MEASUREMENT METHOD 1-Gage 2-Electric 3-Mechanical 4-Weir/flume 5-Doppler		
74069	--	ESTIMATED FLOW (cfs)		
89861	--	STREAM WIDTH (meters)		
82903	--	WATER DEPTH (meters)		
31616	--	FECAL COLIFORM (CFU/100 ml)		
31699		E. coli (MPN/100 ml)		
31609	--	E coli. Geometric Mean (MPN/100 ml)		
89966	1	WEATHER 3-overcast	1-clear 4-rain	2-cloudy
89965	3	WIND INTENSITY	1-calm 3-moderate	2-slight 4-strong
89010	2	WIND DIRECTION	1-north 3-east	2-south 4-west

What Do We We Monitor?

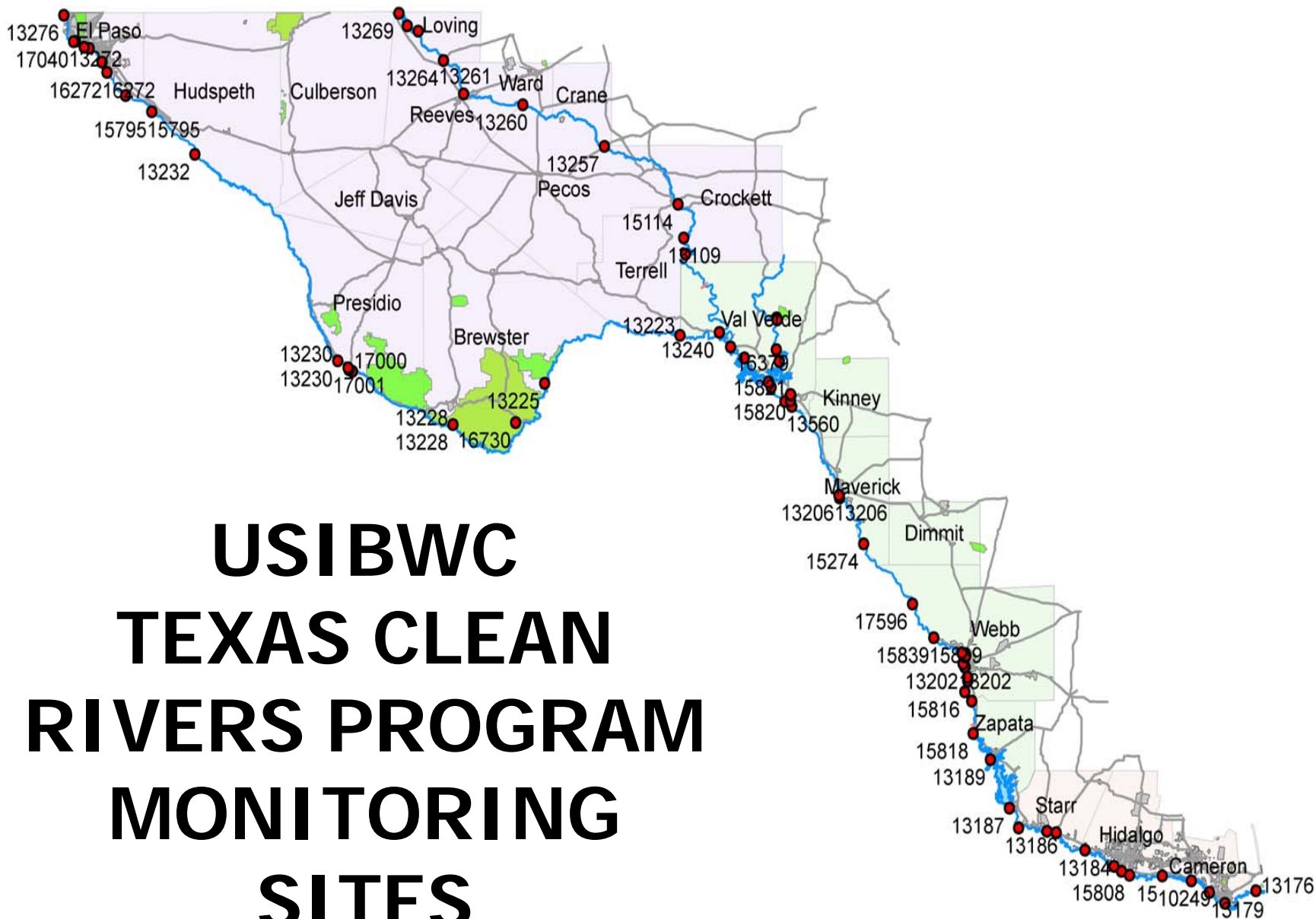
Lab Data

- Nitrogen
- Phosphorus
- Chloride
- Sulfates
- Chlorophyll a
- Pheophytin
- Total organic carbon (TOC)
- Total dissolved solids (TDS)
- Total suspended solids (TSS)
- Bacteria

Final Analysis Report							
LCRA Environmental Laboratory Services				Date: 14-Jun-06			
CLIENT:	International Boundary and Water Commiss			Client Sample ID: Sabal Palm Audubon Sanctuary			
Lab Order:	0606040			Collection Date: 5/31/2006 11:30:00 AM			
Project:	Rio Grande CRP			Matrix: SURFACE WATER			
Lab ID:	0606040-001			Tag No: 16288			
Analyses	Result	Qual	MDL	PQL	Units	DF	Date Analyzed
ICP METALS, TOTAL RECOVERABLE			E200.7				Analyst: TRO
Calcium	103		0.00644	0.200	mg/L	1	6/6/2006 11:28:48 PM
Magnesium	29.3		0.0118	0.200	mg/L	1	6/6/2006 11:28:48 PM
Potassium	7.01		0.0451	0.200	mg/L	1	6/6/2006 11:28:48 PM
Sodium	188		0.0243	0.600	mg/L	1	6/6/2006 11:28:48 PM
ANIONS BY ION CHROMATOGRAPHY			E300				Analyst: WR
Chloride	190		0.75	25.0	mg/L	25	6/7/2006 7:05:00 PM
Sulfate	276		0.66	25.0	mg/L	25	6/7/2006 7:05:00 PM
ALKALINITY			M2320 B				Analyst: WR
Alkalinity, Total (As CaCO3)	144		0	2	mg/L CaCO3	1	6/5/2006
CHLOROPHYLL AND PHEOPHYTIN			E446.0				Analyst: LO
Chlorophyll A	25.7	X	1.17	5.00	µg/L	1	6/6/2006
Pheophytin A	3.23	JK	1.17	5.00	µg/L	1	6/6/2006
NITRATE AND NITRITE			E353.2				Analyst: JT
Nitrogen, Nitrate & Nitrite	0.62		0	0.02	mg/L	1	6/6/2006
AMMONIA AS N			E350.1				Analyst: LL
Nitrogen, Ammonia (As N)	0.082		0.006	0.020	mg/L	1	6/2/2006
TOTAL PHOSPHATE AS P IN WATER			E365.4				Analyst: LL
Phosphorus, Total (As P)	0.261		0.004	0.020	mg/L	1	6/7/2006
SILICA			E370.1				Analyst: LL
Silica, Dissolved (as SiO2)	14.8		0.04	0.50	mg/L	1	6/2/2006
TOTAL DISSOLVED SOLIDS			E160.1				Analyst: JT
Total Dissolved Solids (Residue, Filterable)	892		4.50	5.00	mg/L	1	6/2/2006
ORGANIC CARBON, TOTAL			E415.1				Analyst: CM
Organic Carbon, Total	5.45		0.025	0.500	mg/L	1	6/2/2006
TOTAL SUSPENDED SOLIDS			E160.2				Analyst: JT
Suspended Solids (Residue, Non-Filterable)	46.0		0.5	1.0	mg/L	1	6/2/2006
VOLATILE SUSPENDED SOLIDS			E160.4				Analyst: JT
Volatile Suspended Solids	8.00		0.500	1.00	mg/L	1	6/6/2006
Qualifiers:							
*	Value exceeds Maximum Contaminant Level			B	Analyte detected in the associated Method Blank		
E	Value above quantitation range			H	Holding times for preparation or analysis exceeded		
J	Analyte detected below quantitation limits			ND	Not Detected at the Reporting Limit		
S	Spike Recovery outside accepted recovery limits			X	Value exceeds Maximum Contaminant Level		
Page 3 of 24							

2004 Texas Water Quality Inventory and 303(d) List

- 2006 List comes out this fall
- TCEQ updates every 2 years
- Reviews the past five years' worth of data collected by many organizations statewide
- 2004 List provides an assessment of water quality results collected between March 1, 1998 and February 28, 2003
- Basis for 2006 Basin Highlights Report



Upper Rio Grande Basin Segments



**From the NM / TX state line
down to the International Dam
in El Paso –
21 miles or 33 km**

13276

13272
13272
17040

15529
15528
15528

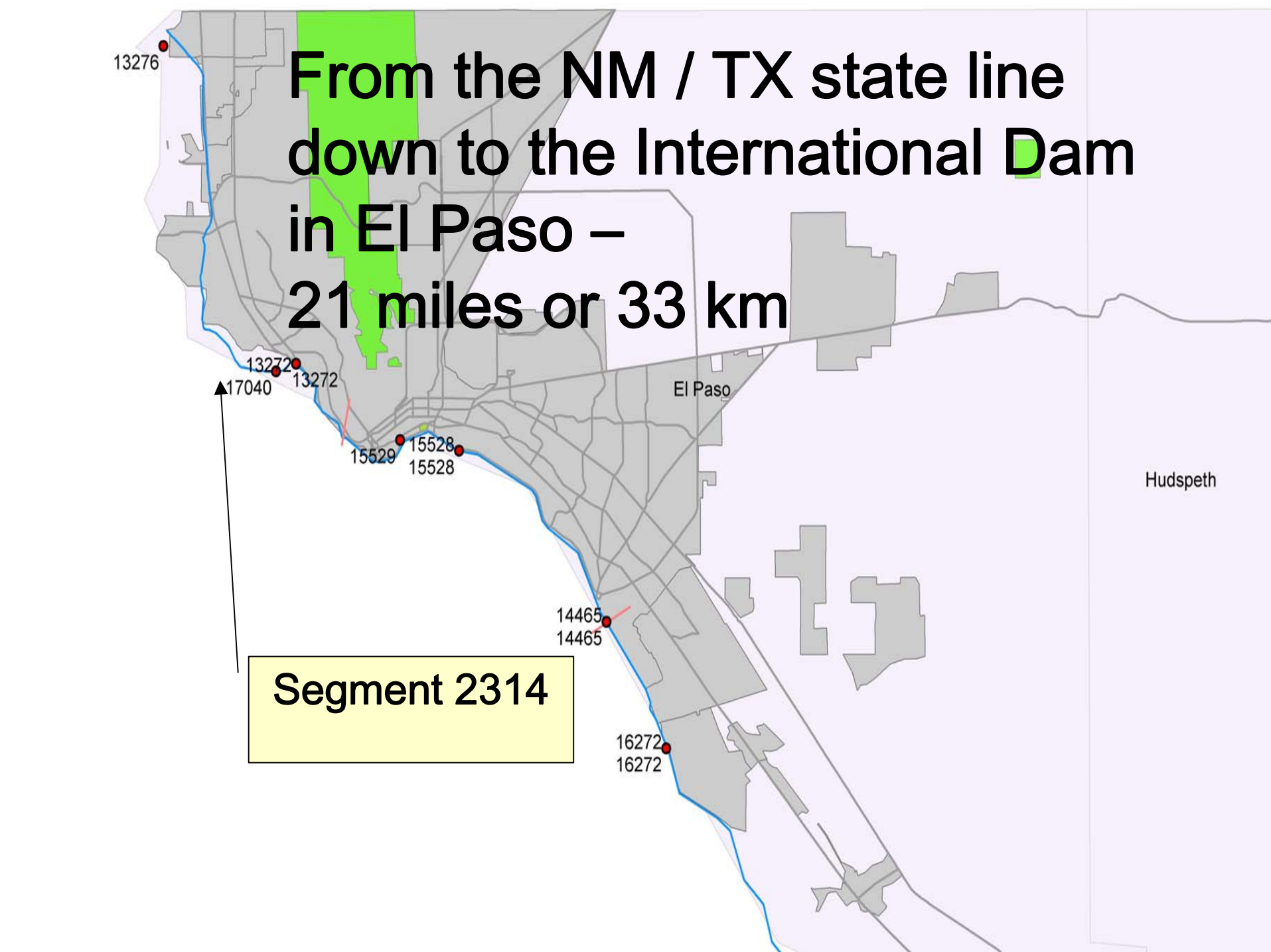
El Paso

Hudspeth

14465
14465

Segment 2314

16272
16272



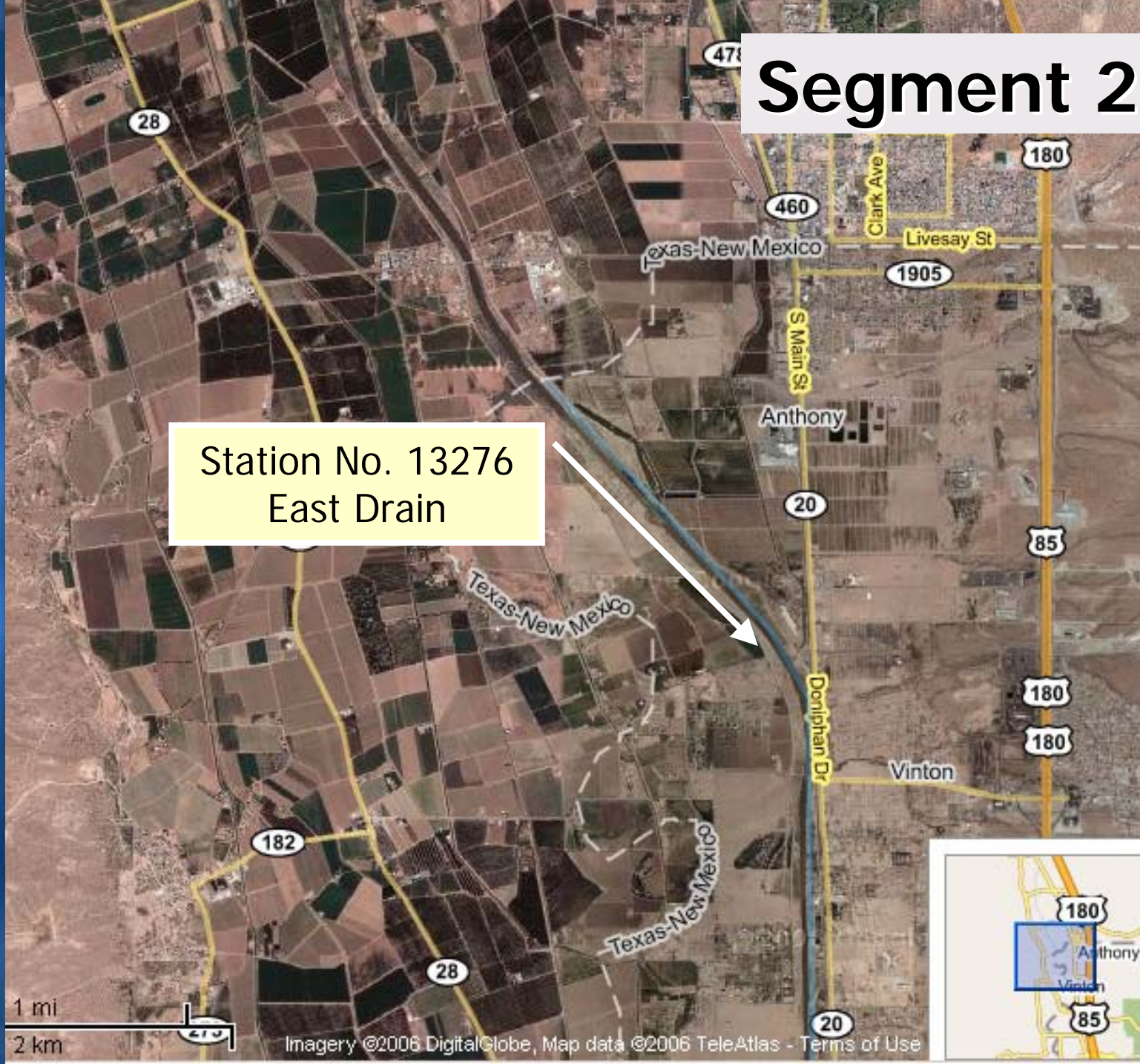
Designated Uses for Segment 2314

- High aquatic life ($\text{DO} > 5 \text{ mg/L}$)
 - Public water supply
 - Fish consumption
 - Contact recreation

Concerns: Bacteria

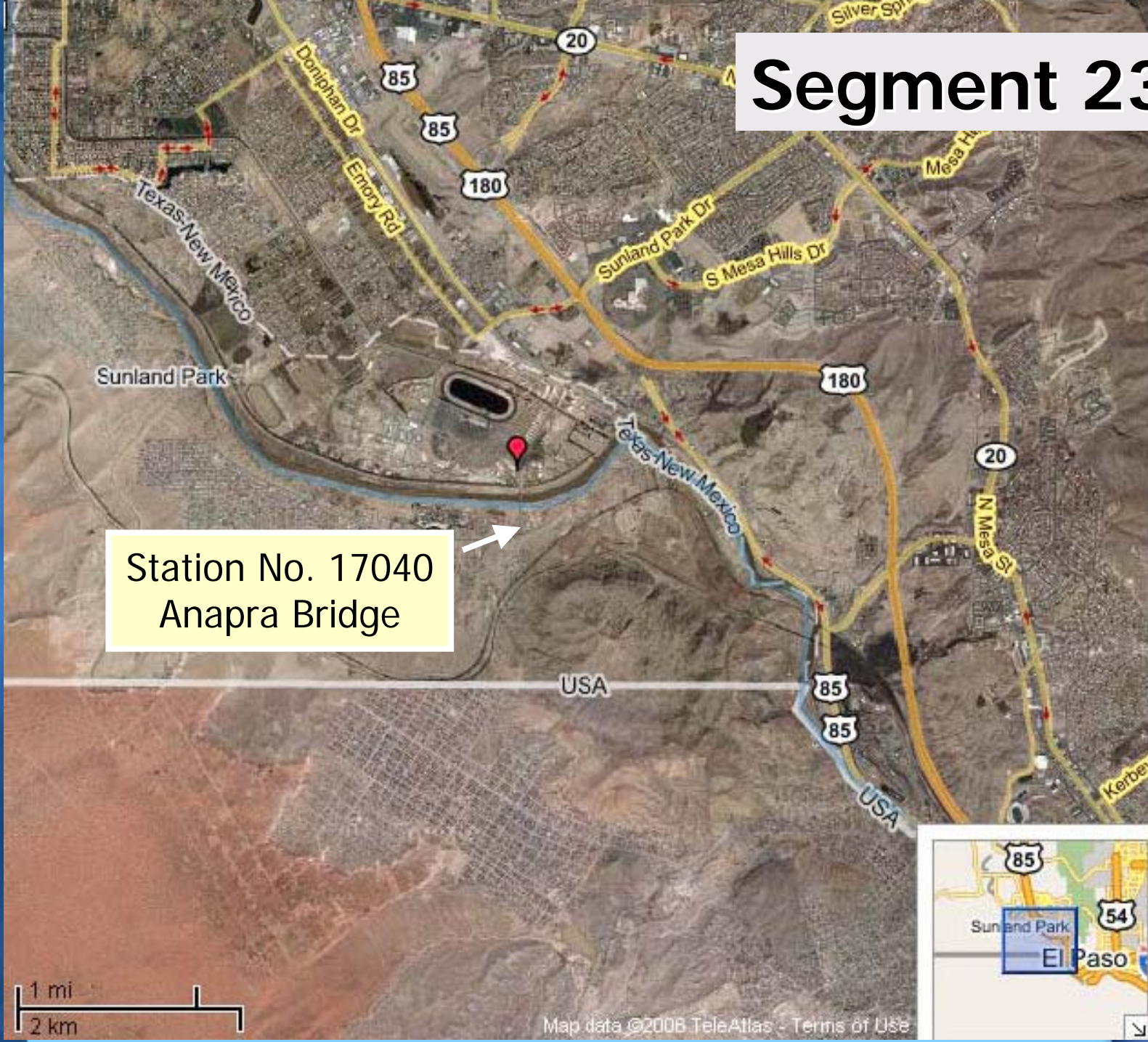
Segment 2314

Station No. 13276
East Drain



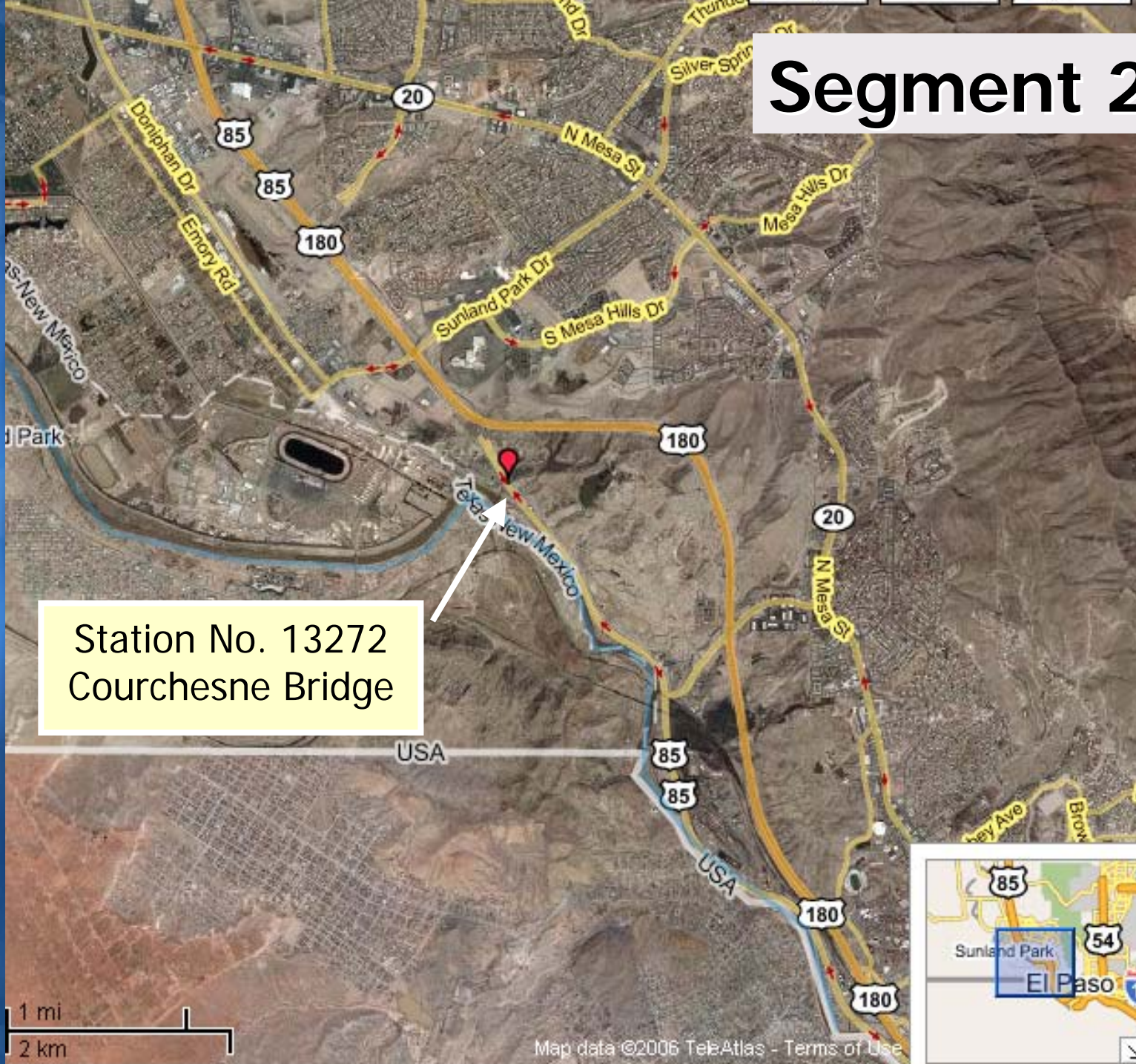
Segment 2314

Station No. 17040
Anapra Bridge

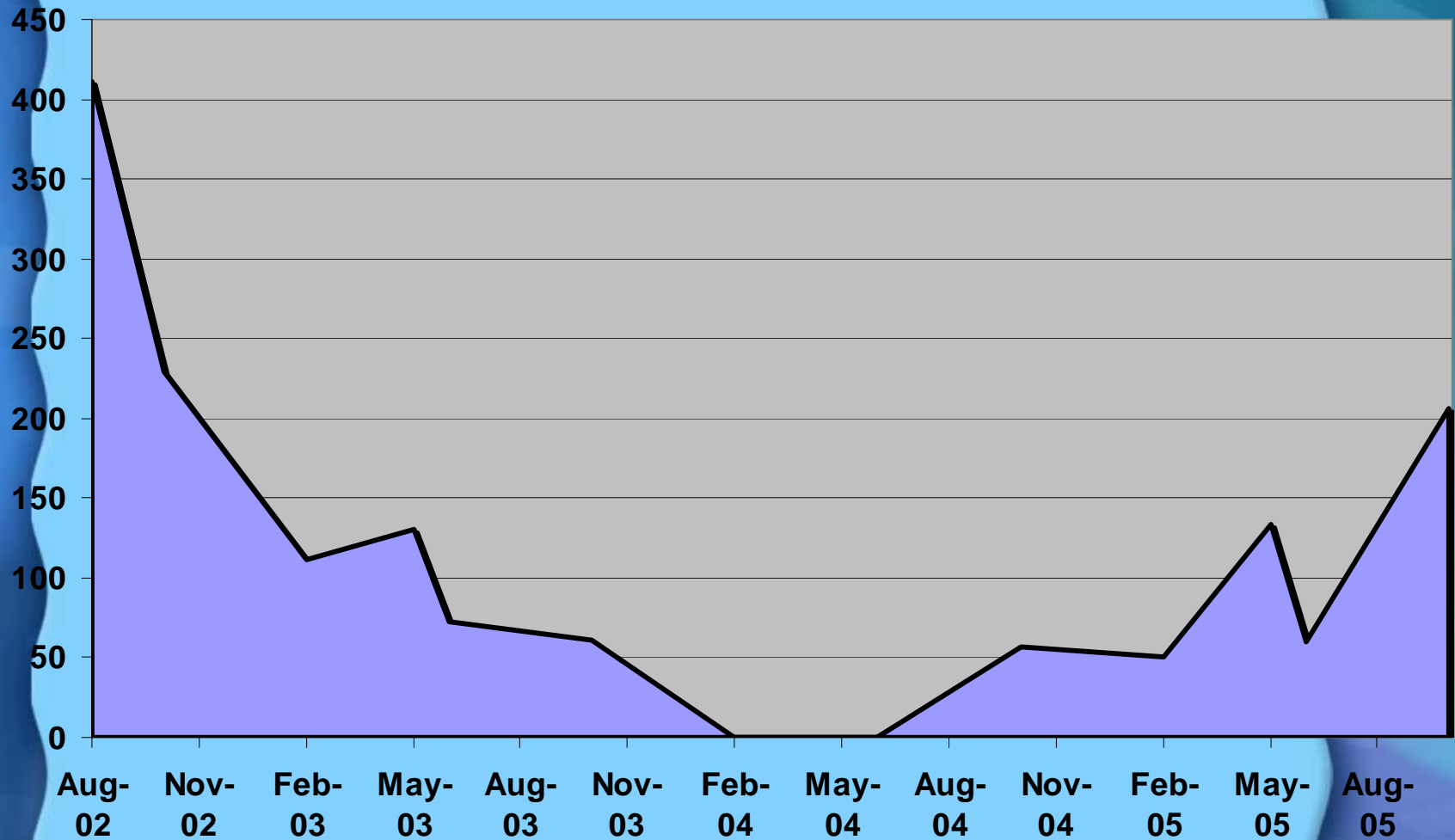


Segment 2314

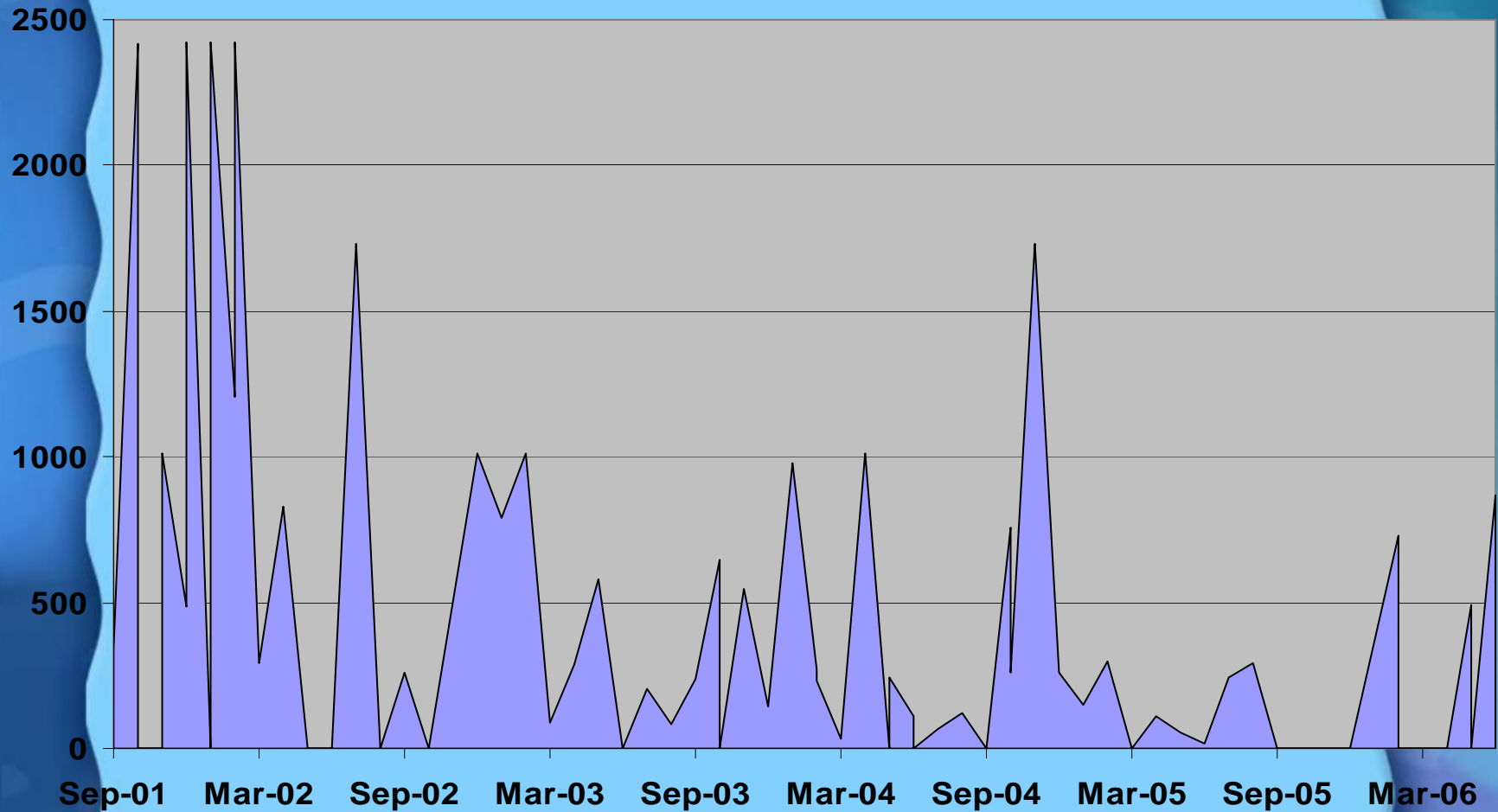
Station No. 13272
Courchesne Bridge



E. coli readings for Station No. 13276
August 2002-October 2005
Geometric mean = 110 MPN / 100 mL
Standard \leq 126 MPN / 100 mL



E. coli readings for Station No. 13272
September 2001-June 2006
Geometric mean = 270 MPN / 100 mL
Standard \leq 126 MPN / 100 mL



**Below the
International Dam
downstream to the
Riverside
Diversion Dam in
El Paso County--
15 miles (24 km)**

Segment 2308

13272
17040 13272

15529 15528
15528

14465
14465

16272
16272

15704
15704

15795
15795

El Paso

Hudspeth

Designated Uses for Segment 2308

- Low aquatic life ($\text{DO} < 3 \text{ mg/L}$)
- Public water supply
- Fish consumption
- Non-contact recreation

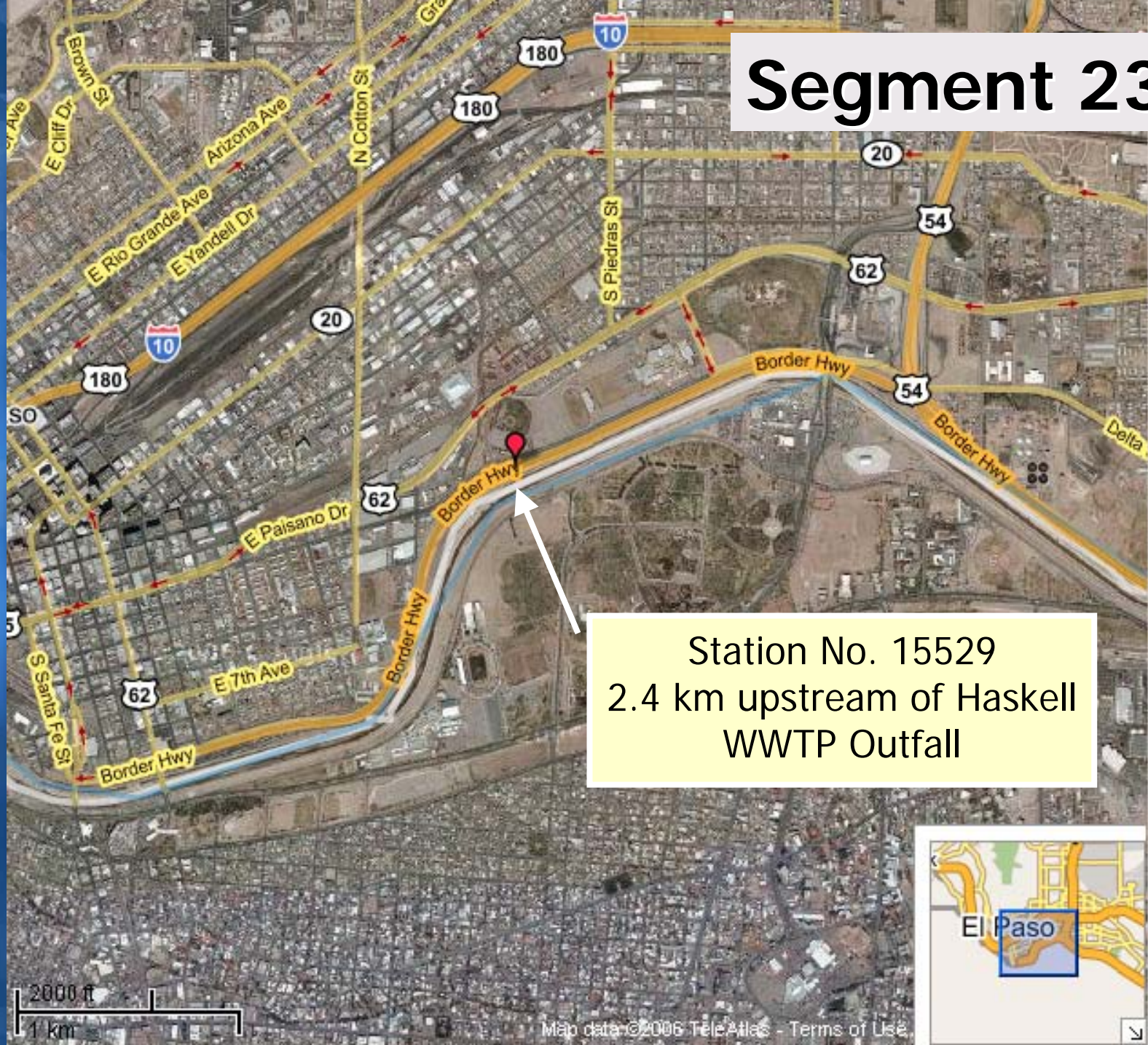
Concerns:

- Phosphorus

Impacted by:

- Concrete lining
- Lack of water

Segment 2308



Station No. 15529
2.4 km upstream of Haskell
WWTP Outfall



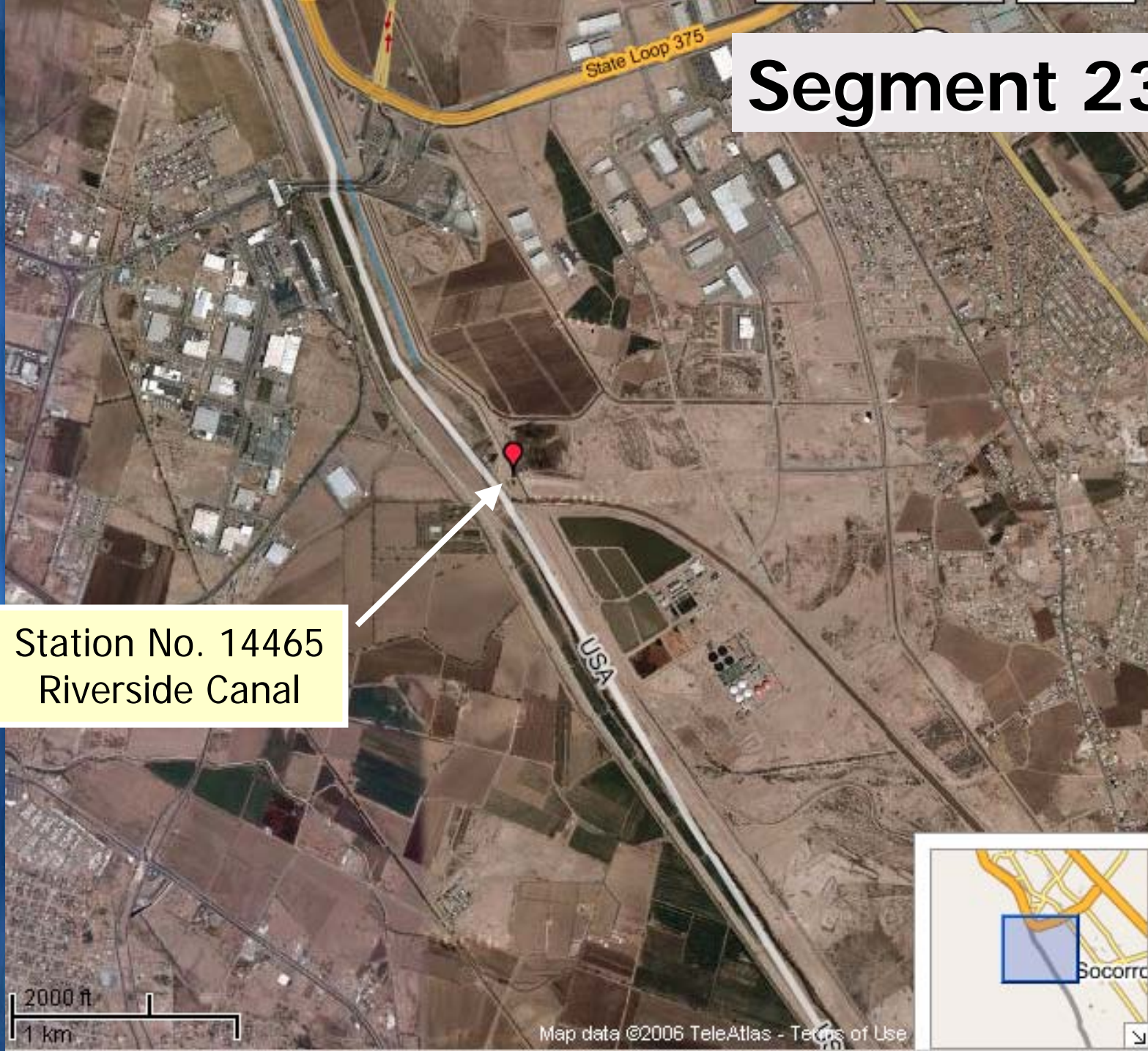
Segment 2308

Station No. 15528
1.3 km downstream from
Haskell WWTP Outfall

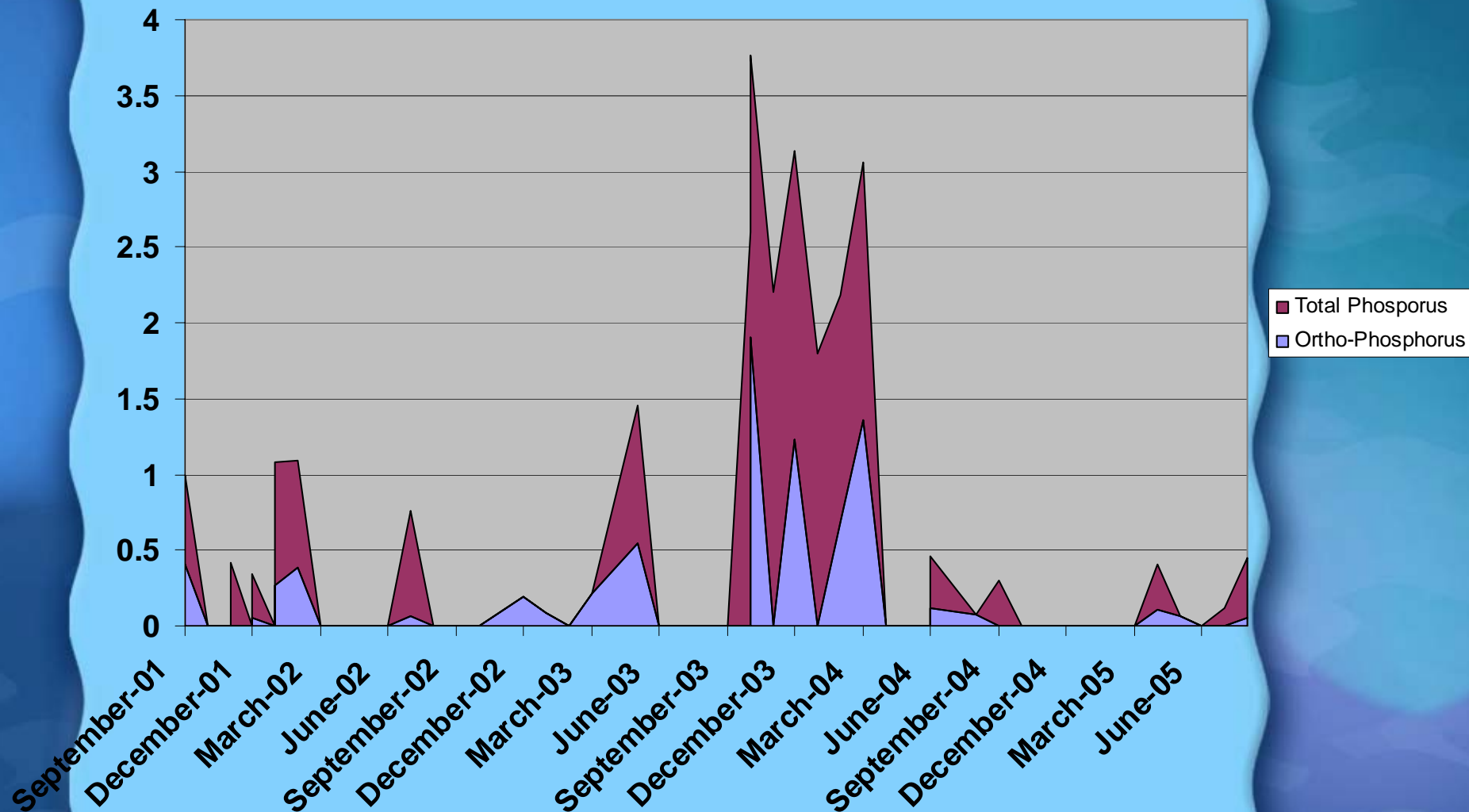


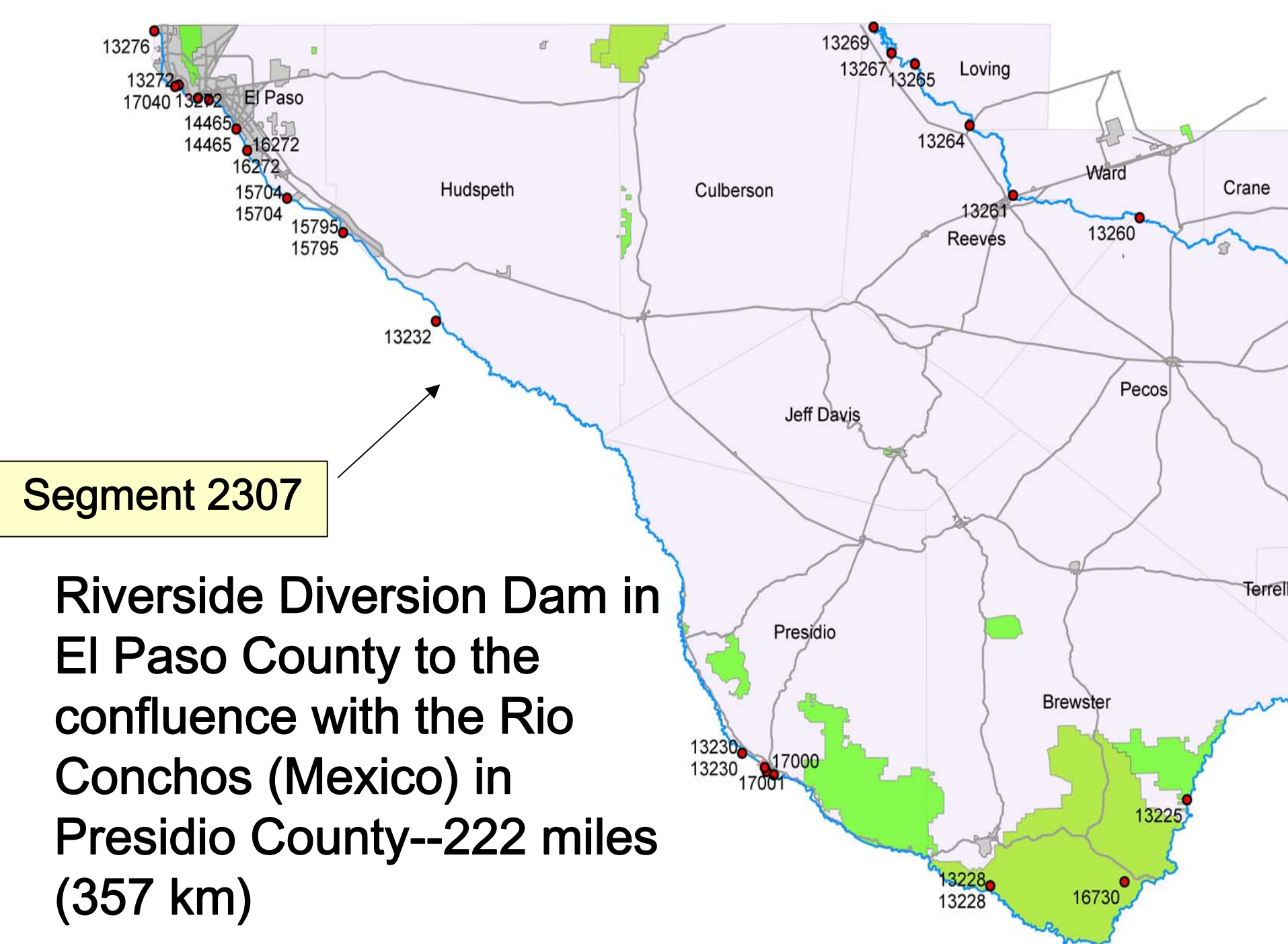
Segment 2308

Station No. 14465
Riverside Canal



Total / Ortho-Phosphorus mg/L for Station No. 15528
September 2001 to August 2005
Average = 1.02 mg/L / 0.4 mg/L





Designated Uses for Segment 2307

- High aquatic life
- Public water supply
- Fish consumption
- Contact recreation

Impacted by:

- Irrigated Agriculture
- Wastewater Treatment Effluent

Impairments: high bacteria, chloride, sulfate, TDS, ammonia, and phosphorus

Segment 2307

Station No.
16272
San Elizario

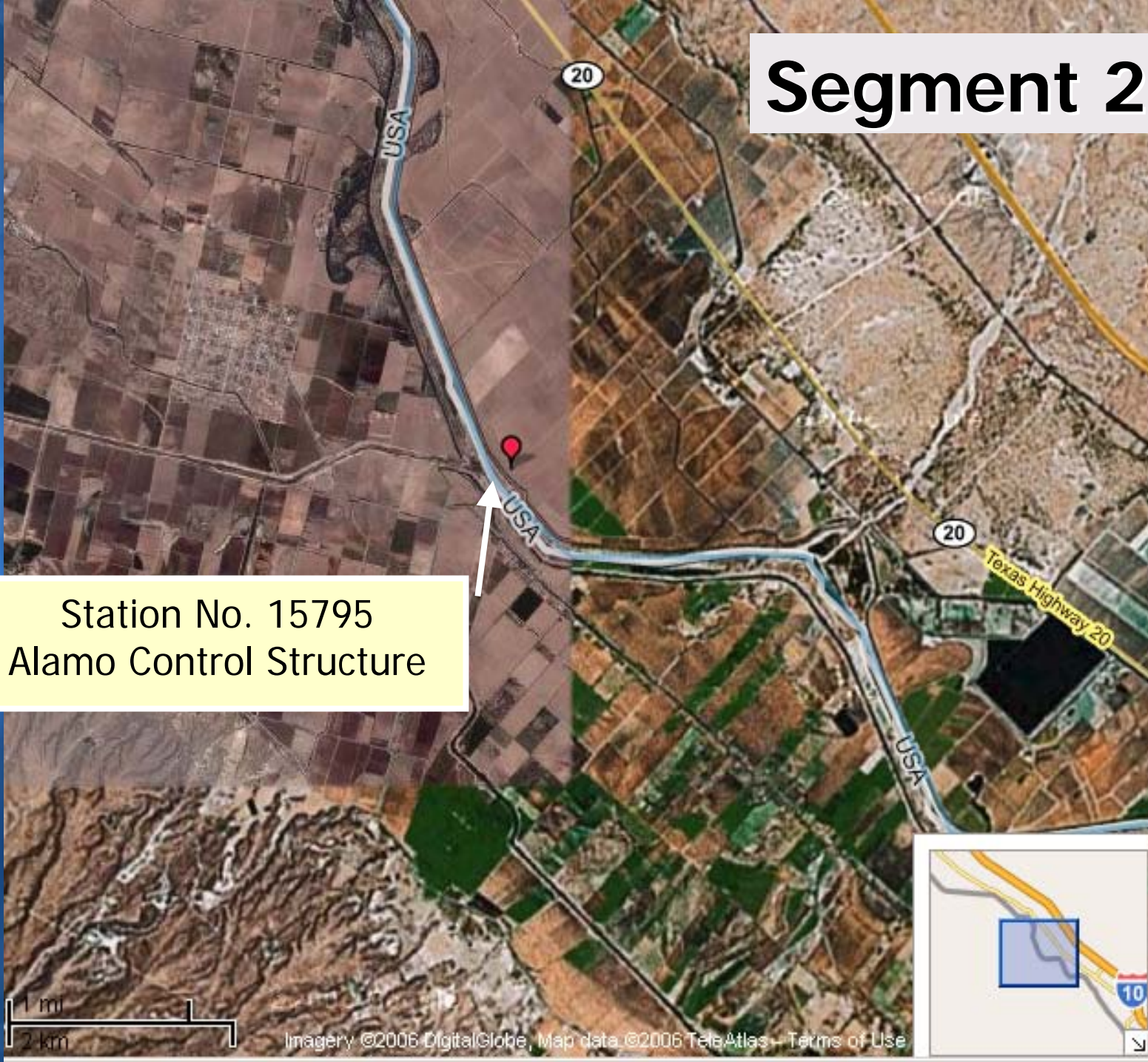
1000 ft
500 m

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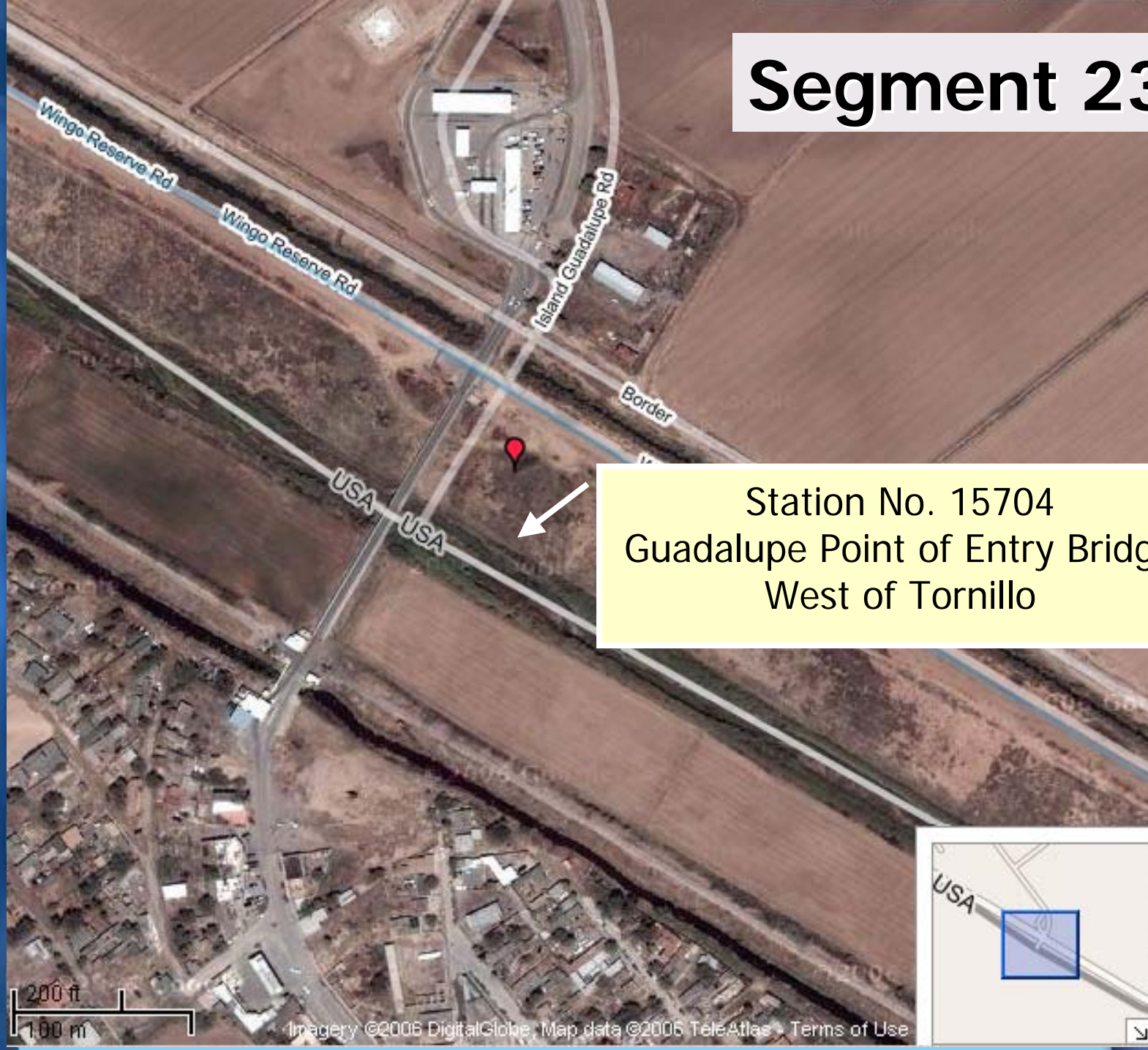


Segment 2307

Station No. 15795
Alamo Control Structure



Segment 2307



Station No. 15704
Guadalupe Point of Entry Bridge
West of Tornillo



200 ft
100 m

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Segment 2307

Station No. 13232
Neely Canyon South of
Fort Quitman



2000 ft
1 km

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Segment 2307

Station No. 13230
2.4 mi upstream from
Rio Conchos confluence



2 mi
2 km

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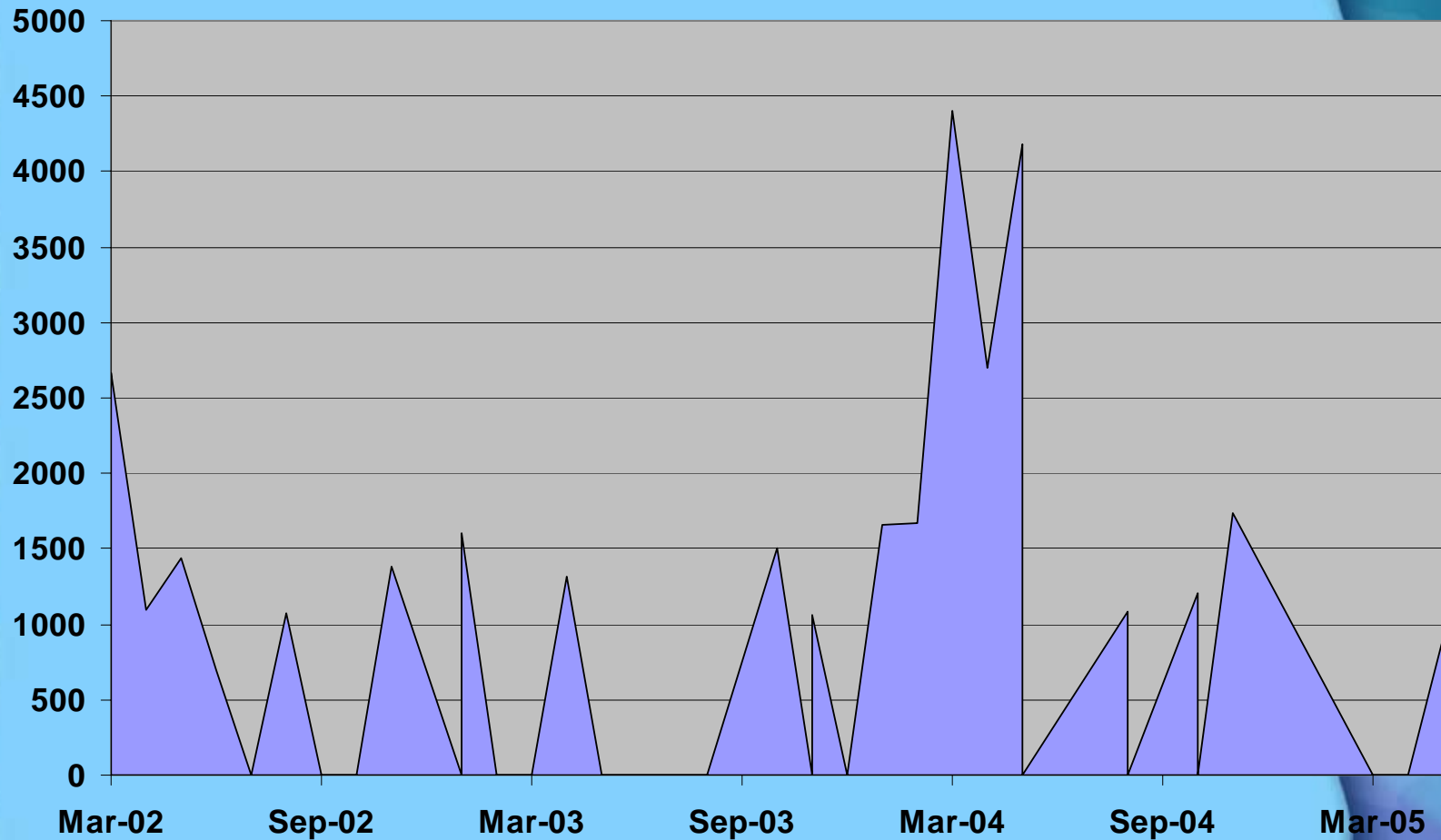


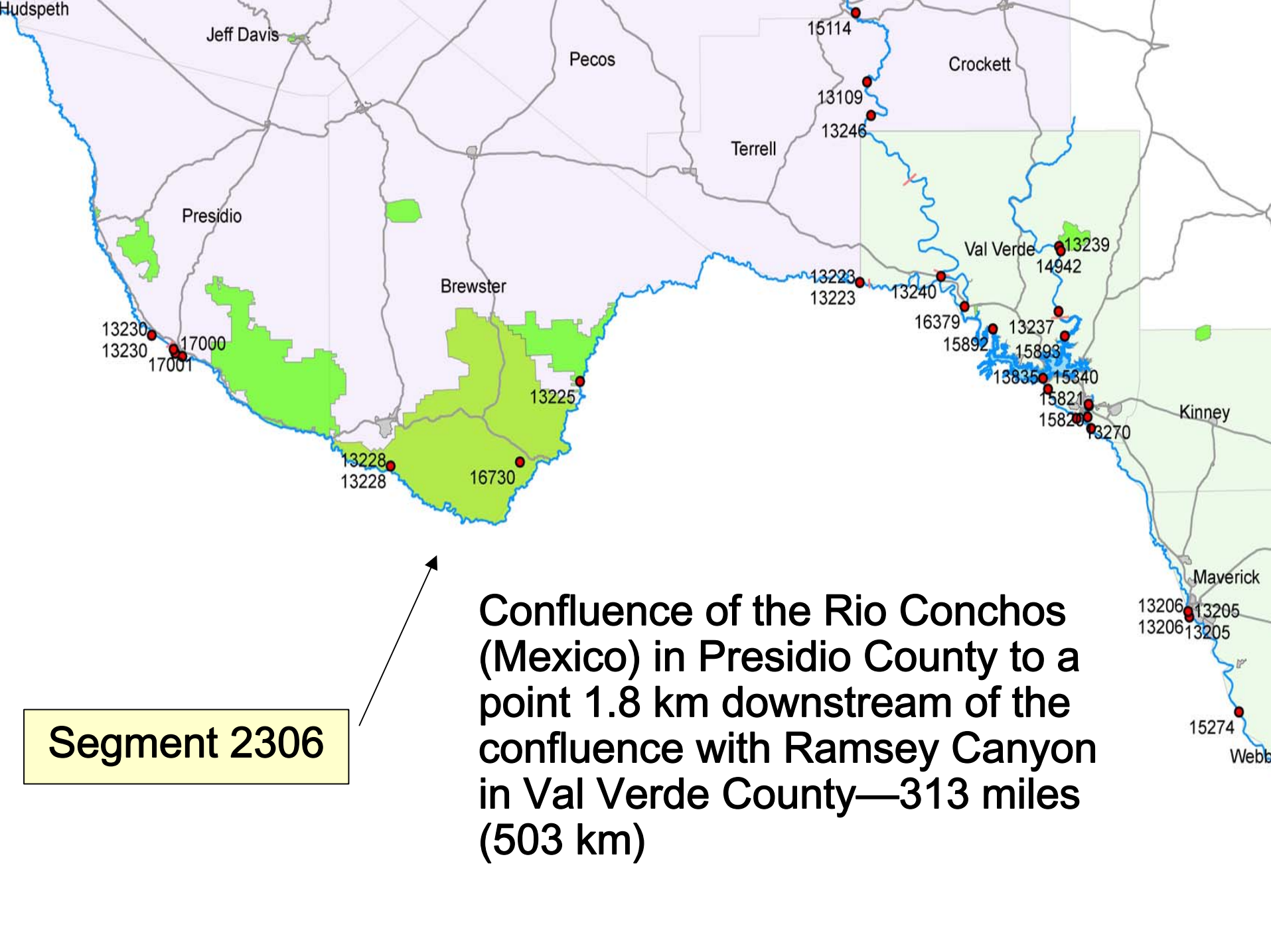
TDS mg/L for Station No. 15795

March 2002 to May 2005

Average = 1754

Standard = 1500





Segment 2306

Confluence of the Rio Conchos (Mexico) in Presidio County to a point 1.8 km downstream of the confluence with Ramsey Canyon in Val Verde County—313 miles (503 km)

Designated Uses for Segment 2306

- *Aquatic life*

- Public water supply
- Fish consumption

Impacted by:

- Presidio, TX
- Ojinaga, Chih

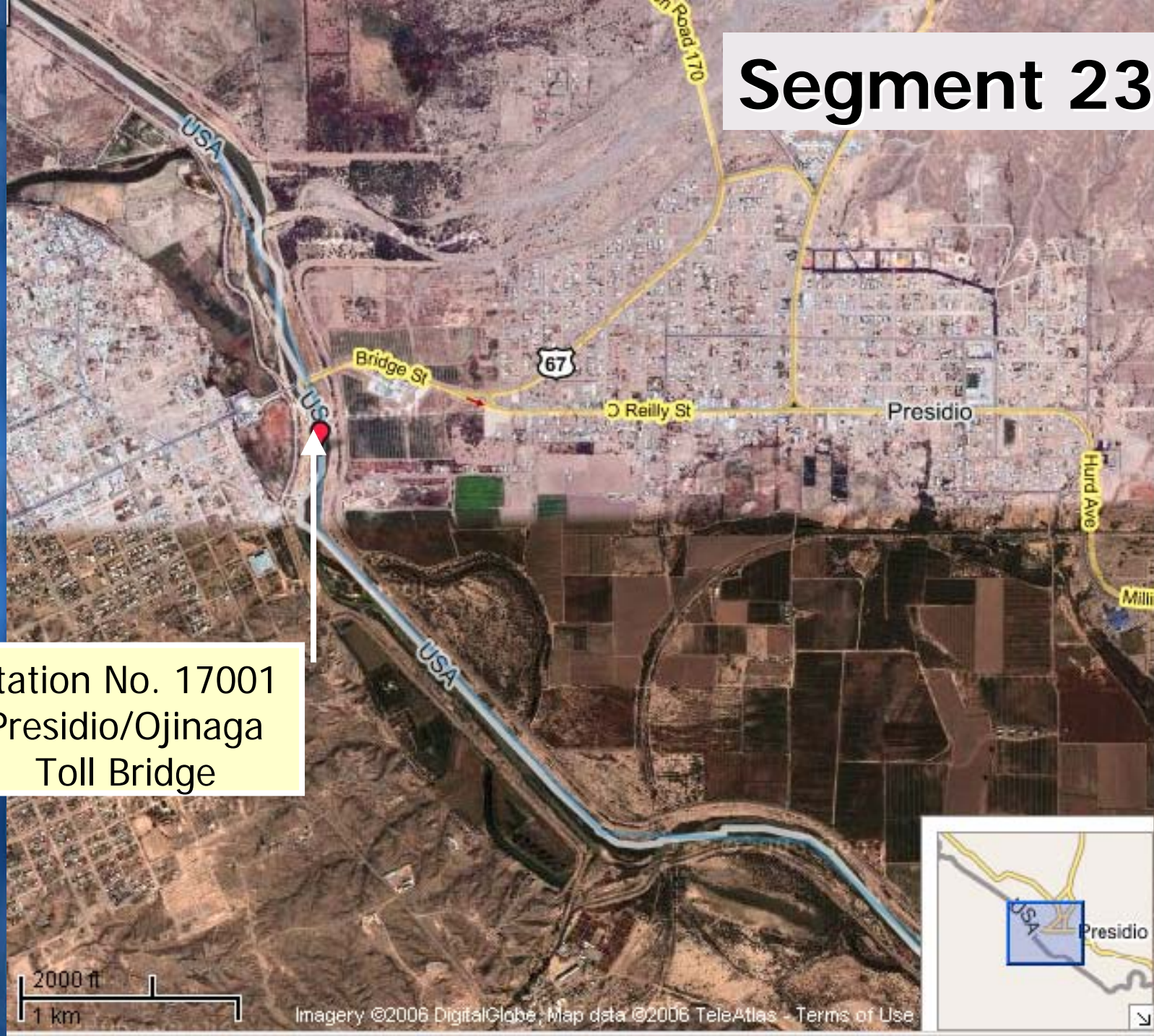
- *Contact recreation*

Impairments: bacteria, chronic toxicity in water to aquatic organisms (salinity)

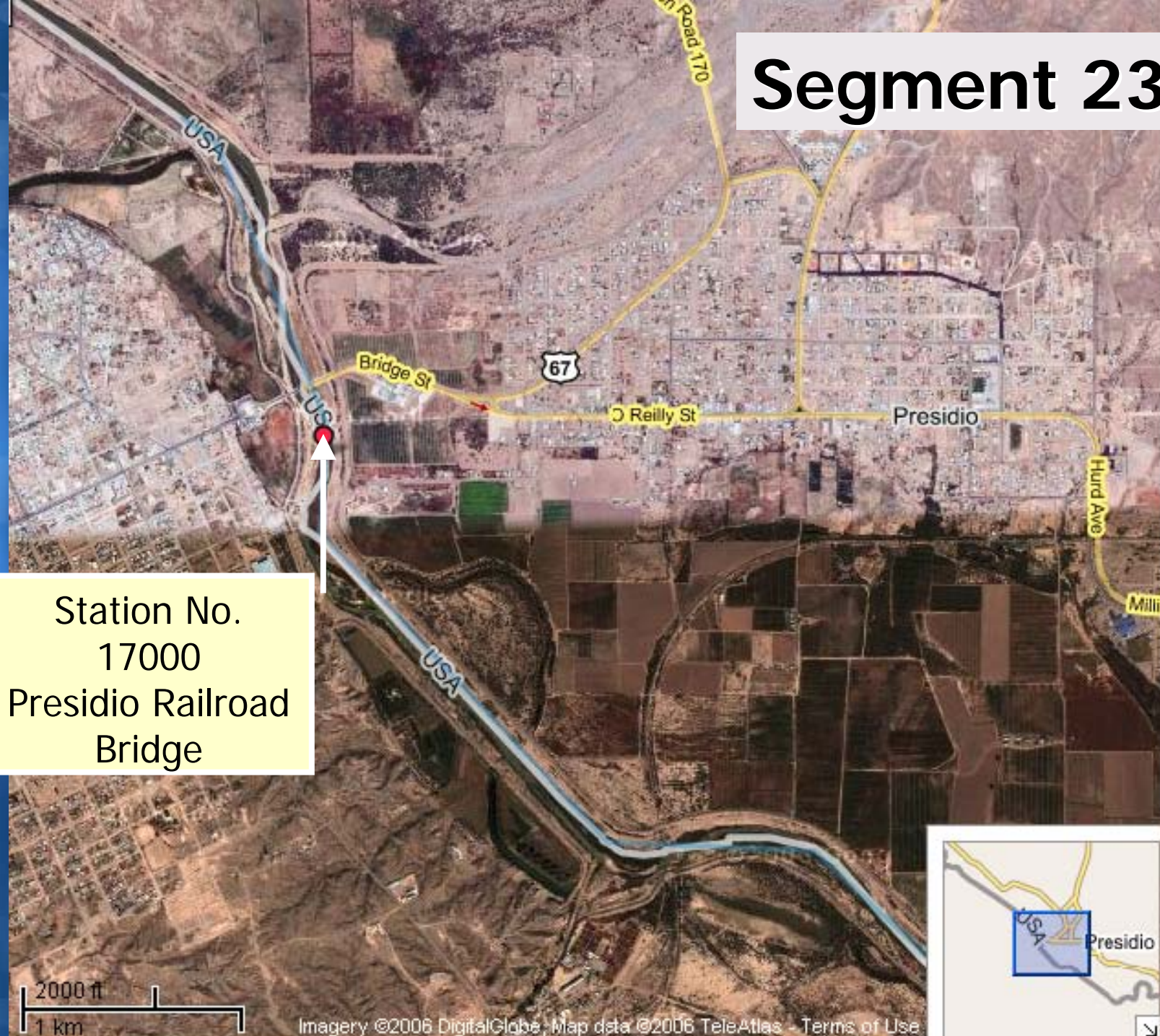
Concerns: TDS, algae blooms, sulfate

Segment 2306

Station No. 17001
Presidio/Ojinaga
Toll Bridge



Segment 2306

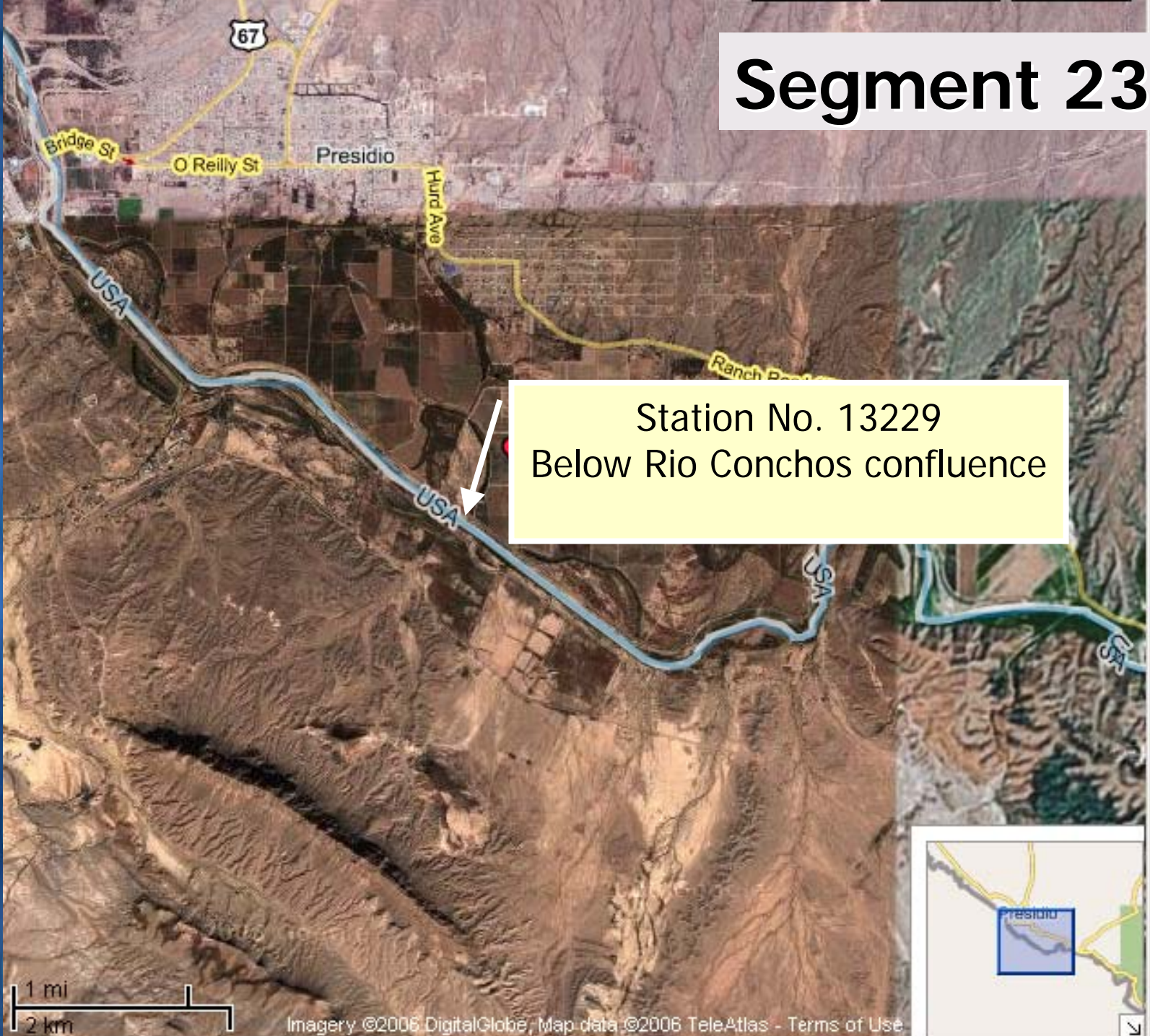


Station No.
17000
Presidio Railroad
Bridge



Segment 2306

Station No. 13229
Below Rio Conchos confluence



Segment 2306

Station No. 13228
Mouth of Santa
Elena Canyon



1 mi

2 km

Segment 2306

Station No. 16730
Boat Ramp at Rio
Grande Village in Big
Bend NP



Segment 2306

Station No. 13225
Gerstacker Bridge
below Big Bend NP

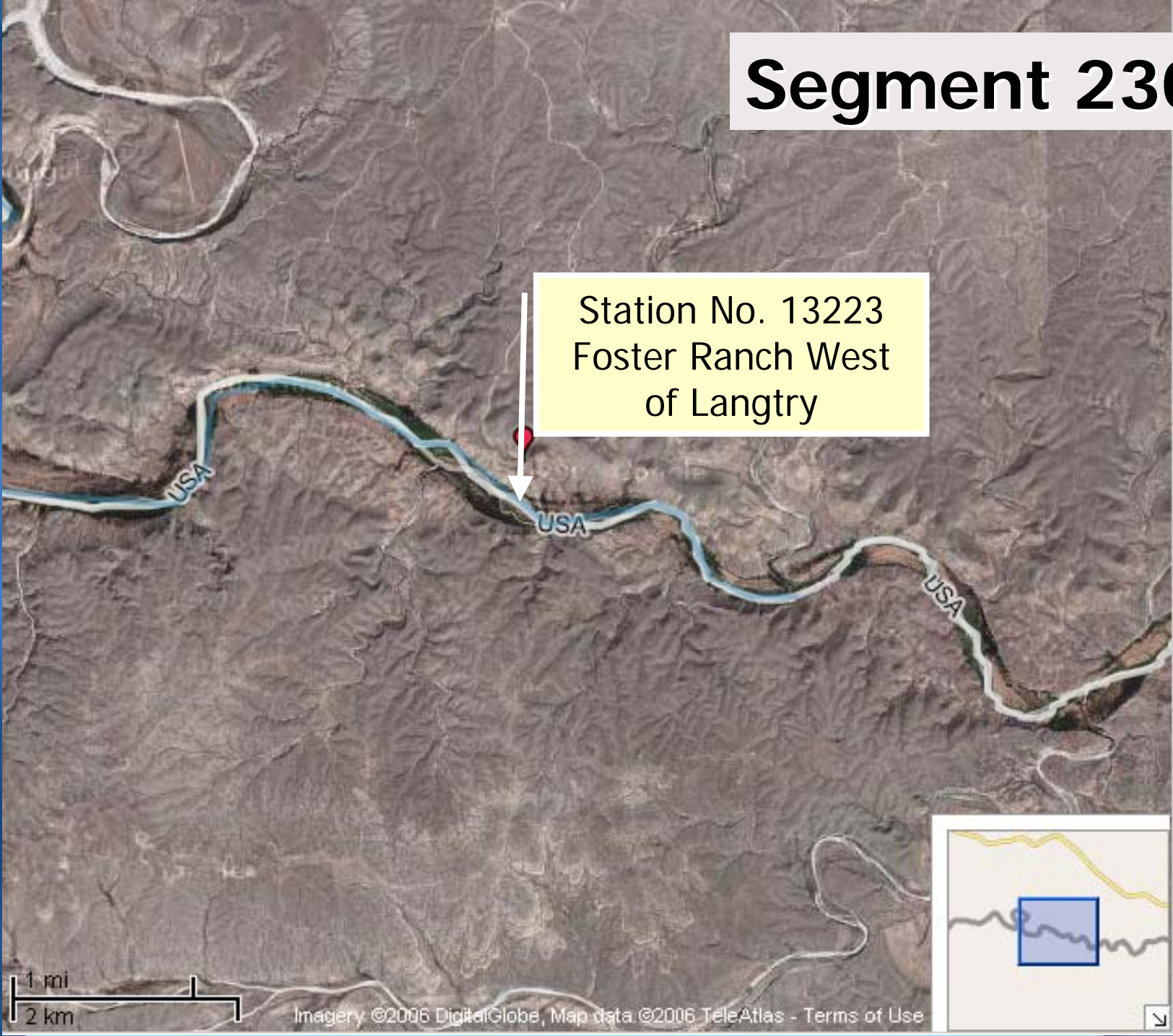
2000 ft
1 km

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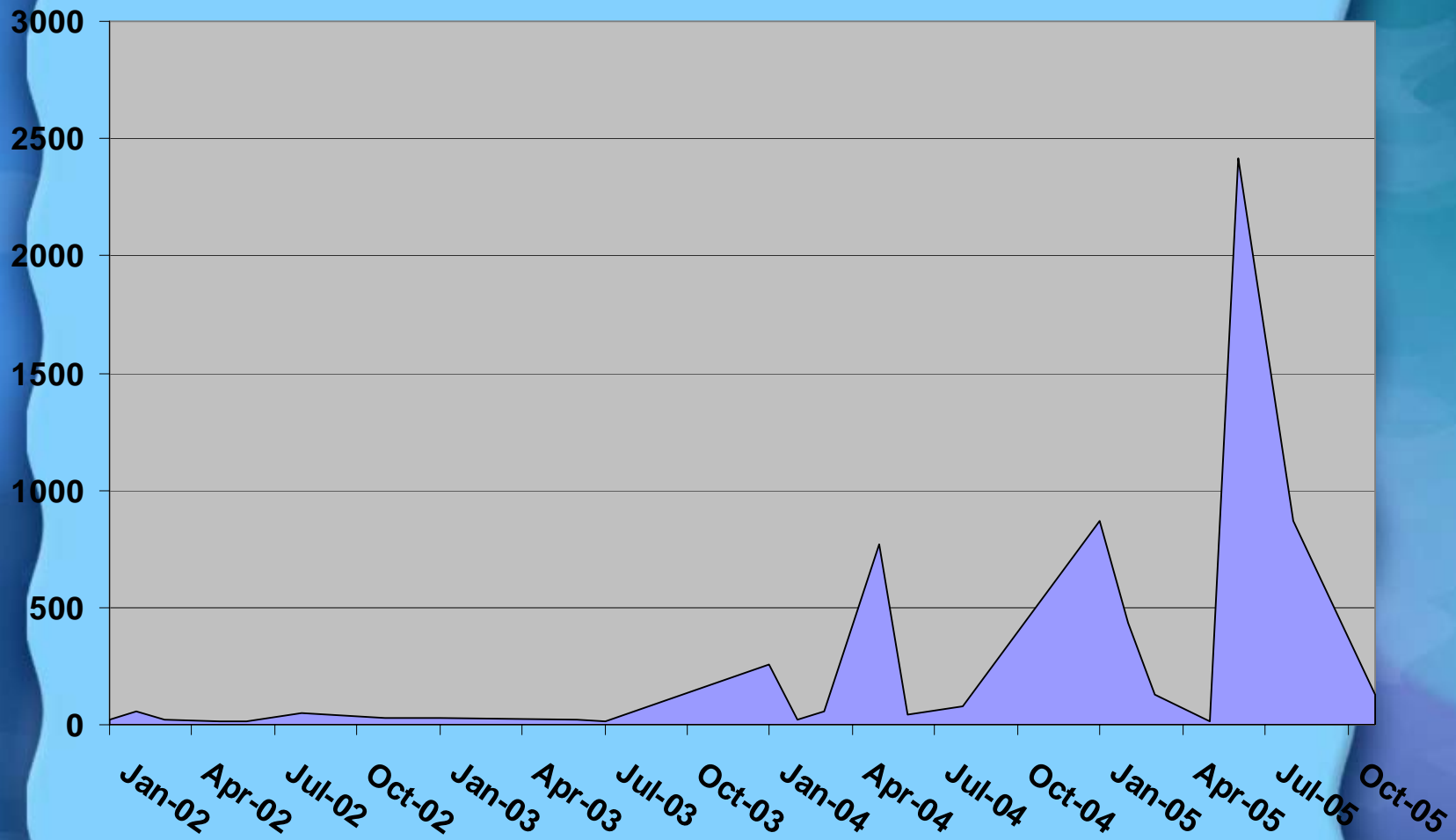


Segment 2306

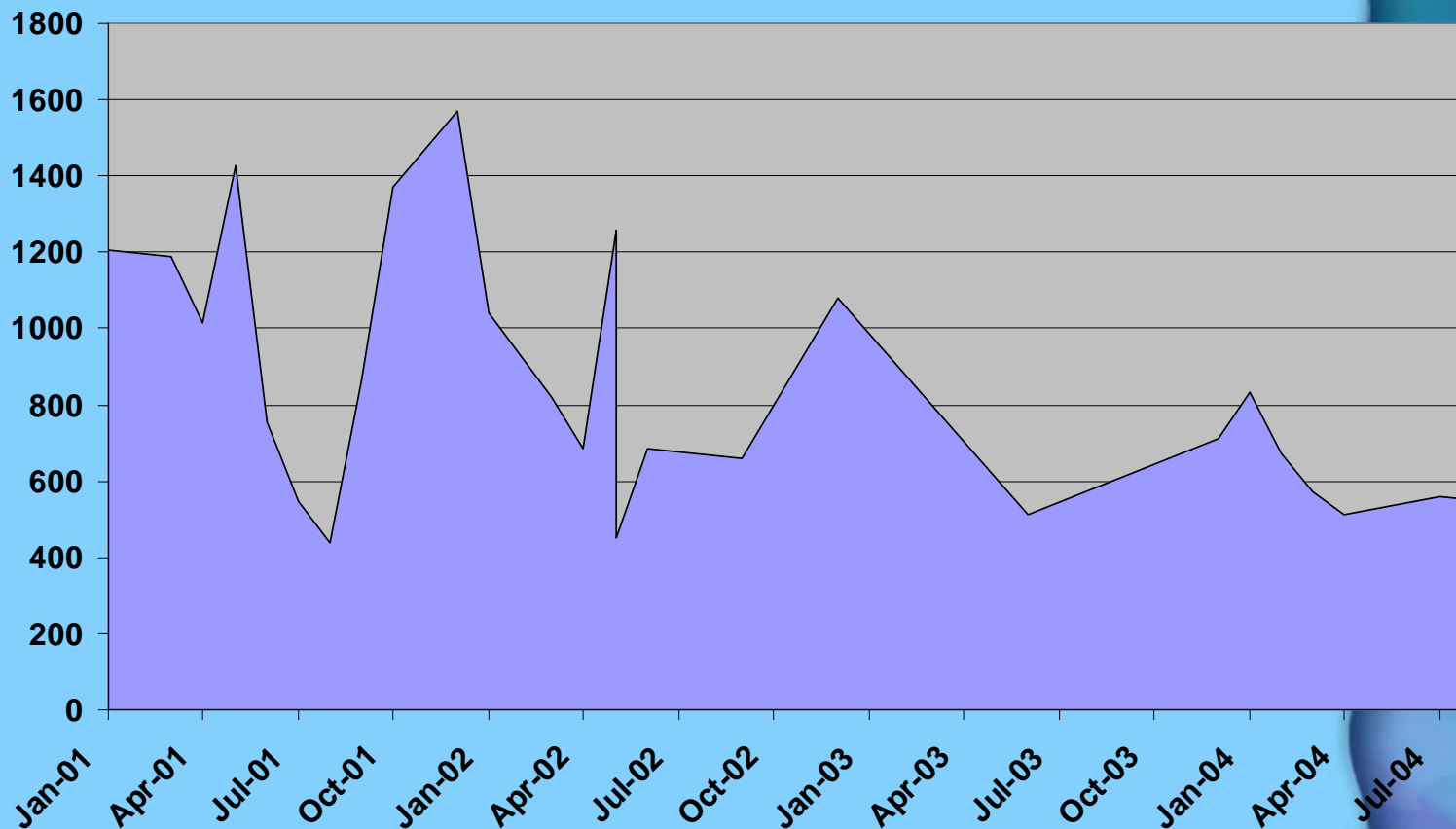
Station No. 13223
Foster Ranch West
of Langtry

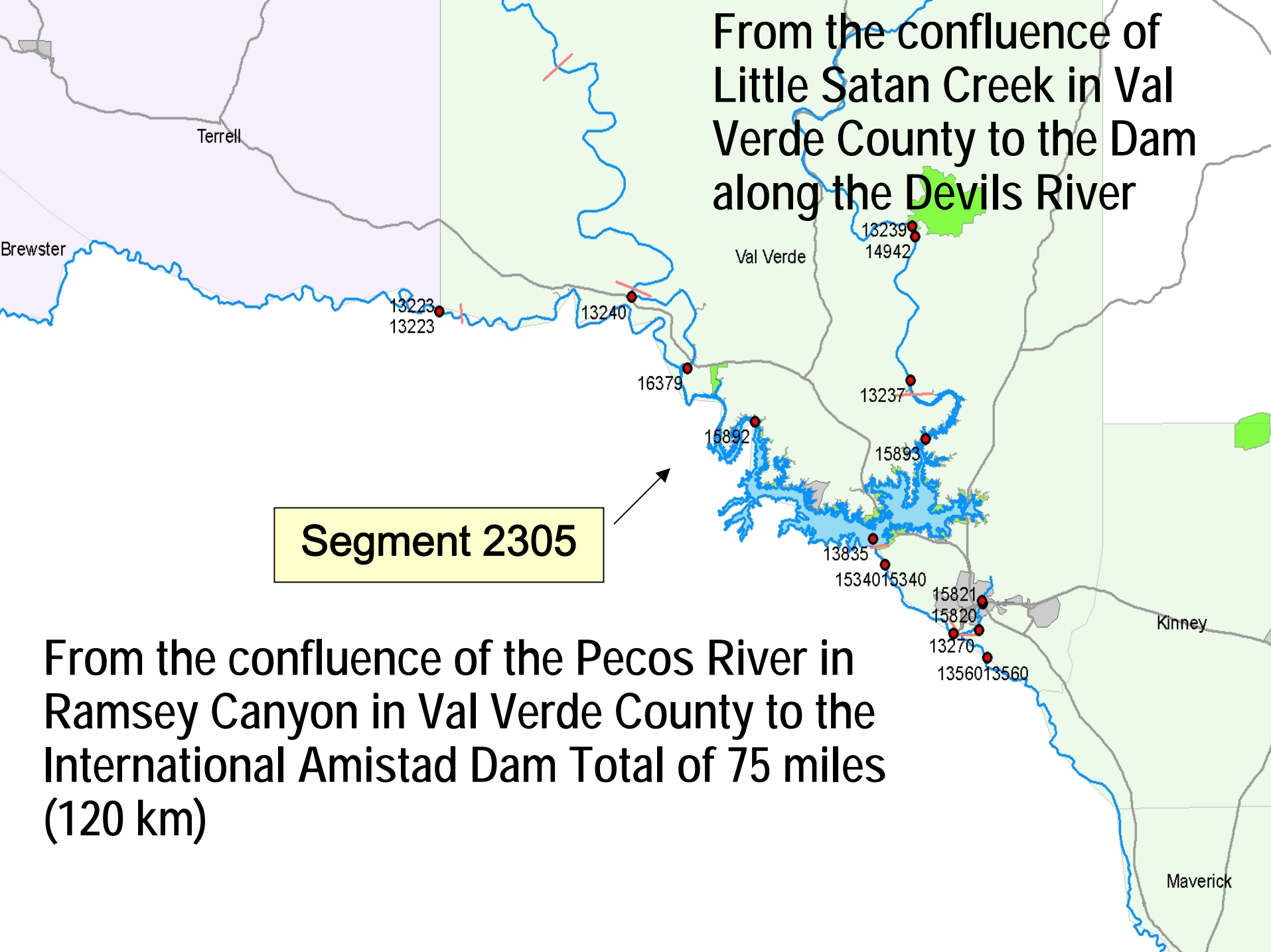


E. coli readings for Station No. 17001
January 2002-November 2005
Geometric mean = 72 MPN / 100 mL
Standard \leq 126 MPN / 100 mL



TDS mg/L for Station No. 13223
January 2001 to August 2004
Average = 845 mg/L
Standard = 1500 mg/L





From the confluence of
Little Satan Creek in Val
Verde County to the Dam
along the Devils River

Segment 2305

From the confluence of the Pecos River in
Ramsey Canyon in Val Verde County to the
International Amistad Dam Total of 75 miles
(120 km)

Designated Uses for Segment 2305

- High aquatic life
- Public water supply
- Fish consumption
- Contact recreation

Concerns: phosphorus

Segment 2305

Station No. 15893
Devils River Arm at
Buoy DRP

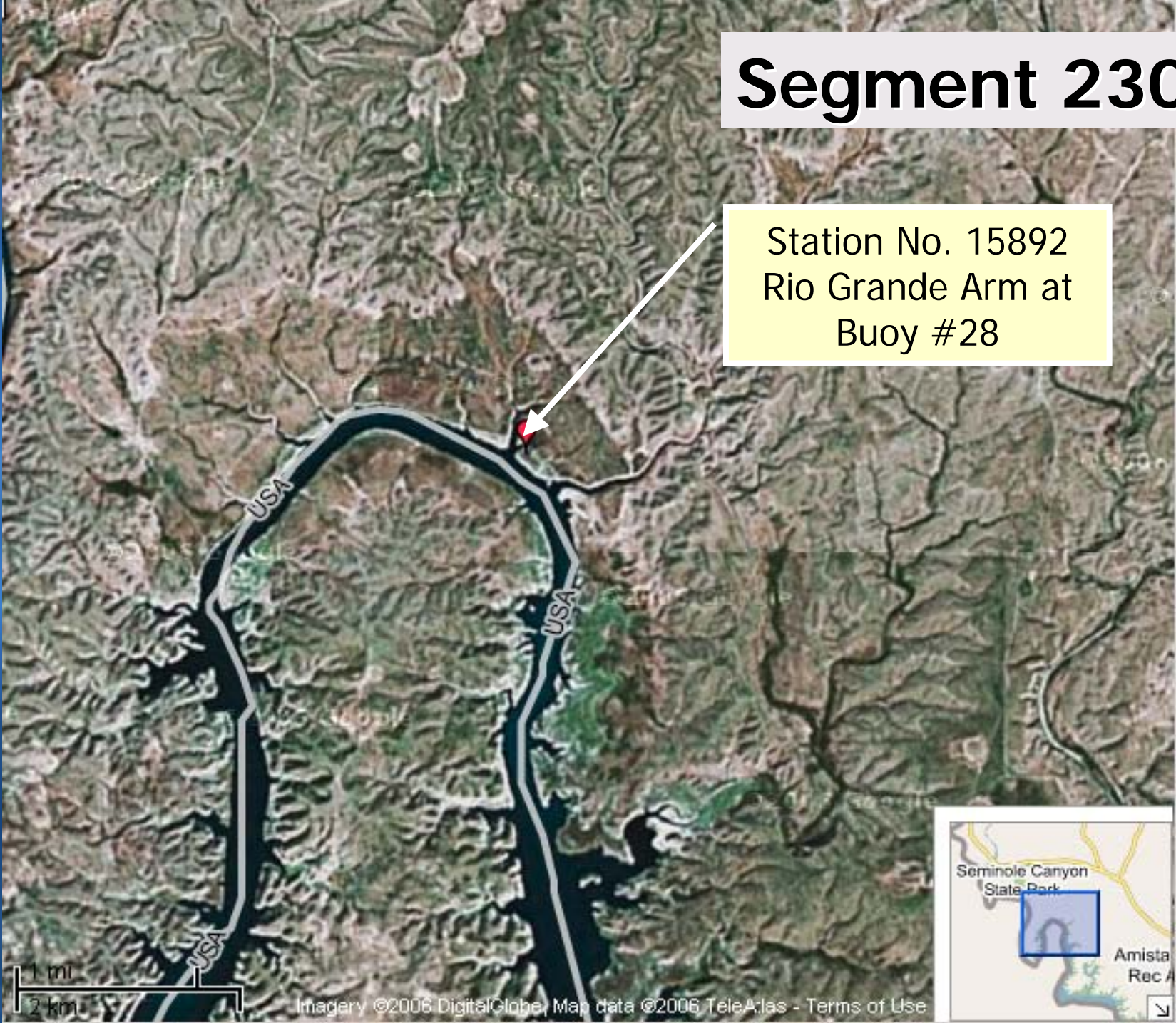


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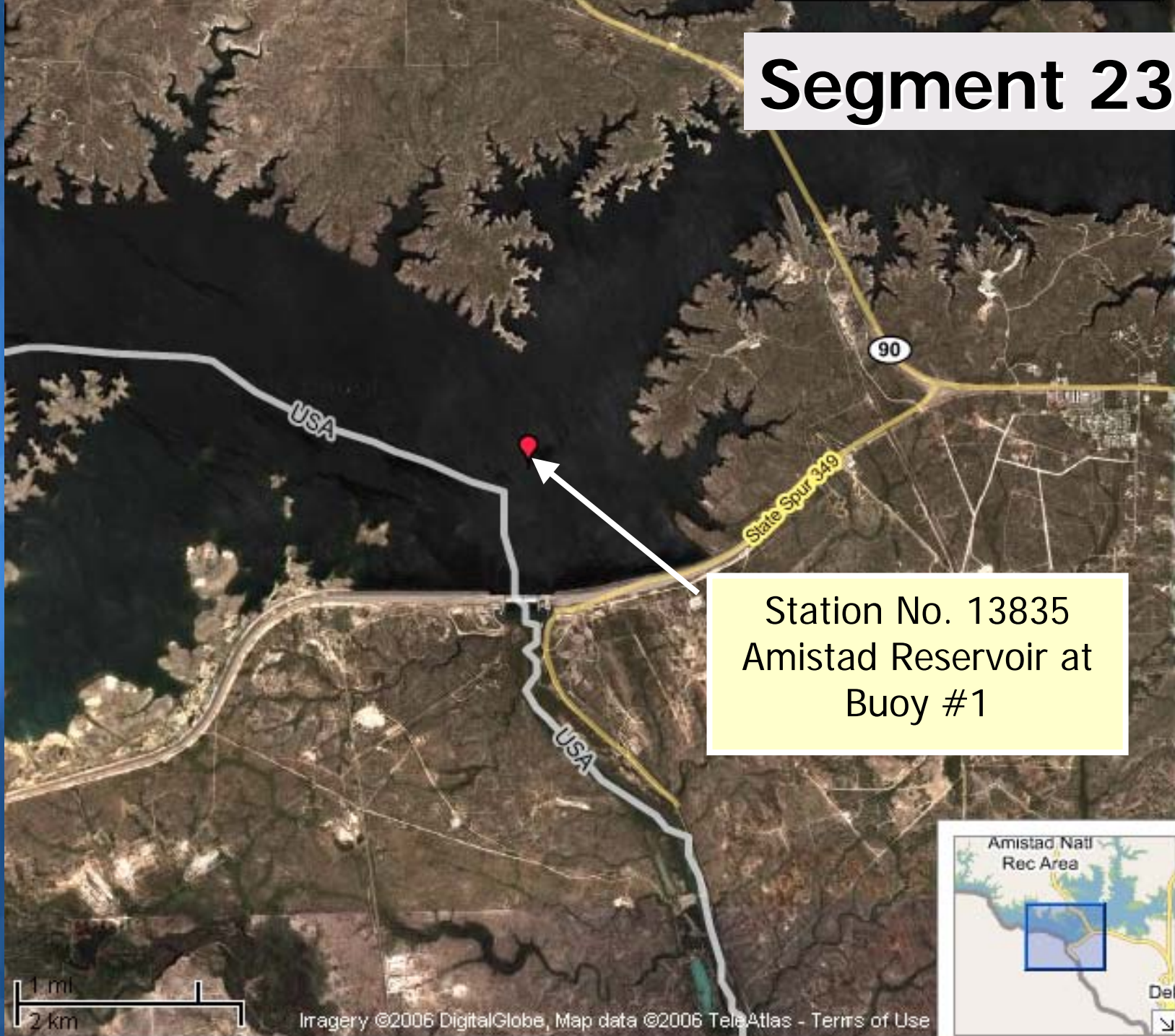


Segment 2305

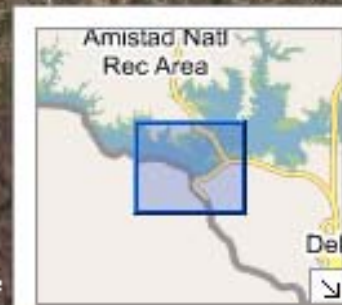
Station No. 15892
Rio Grande Arm at
Buoy #28



Segment 2305



Station No. 13835
Amistad Reservoir at
Buoy #1

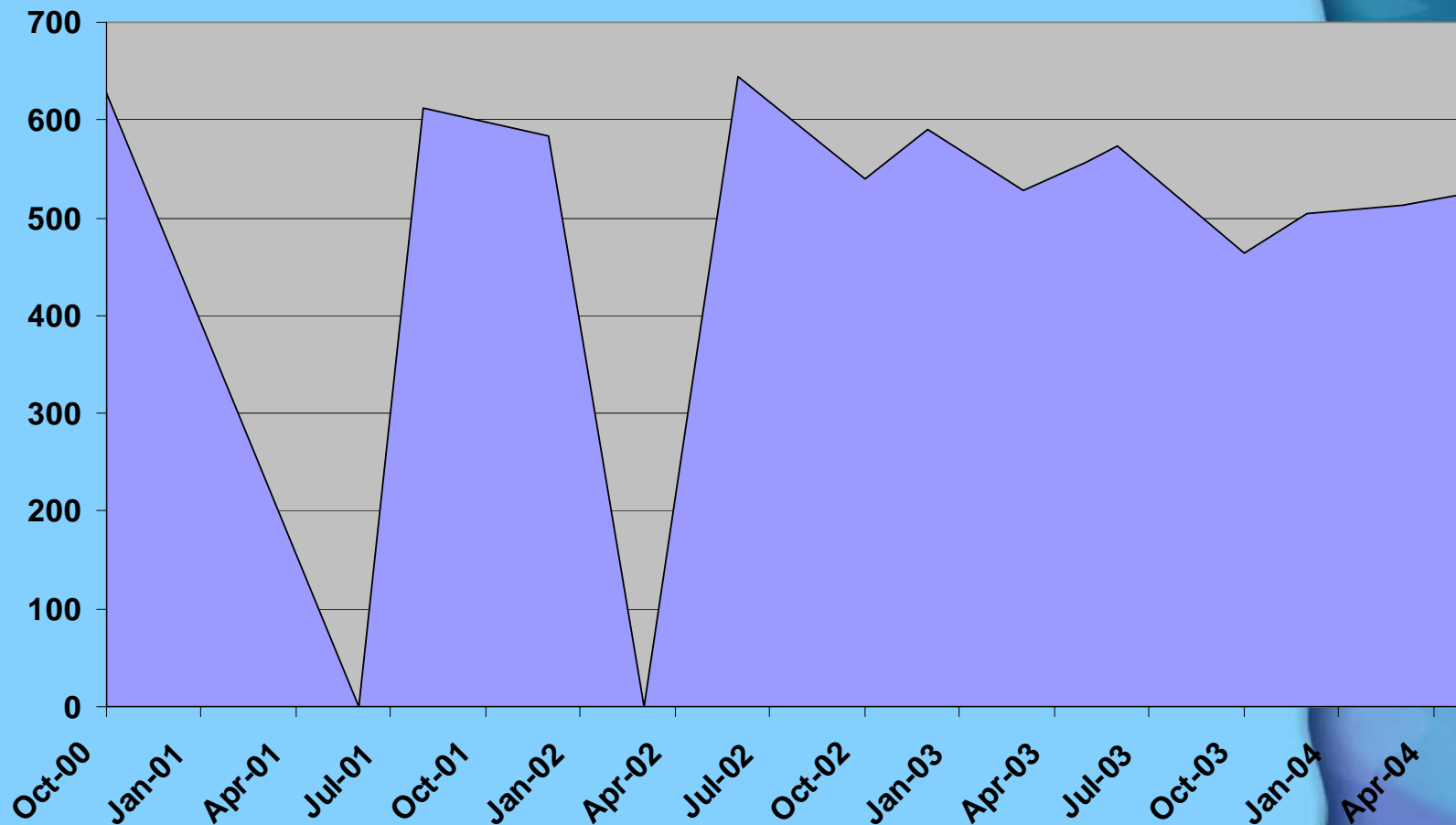


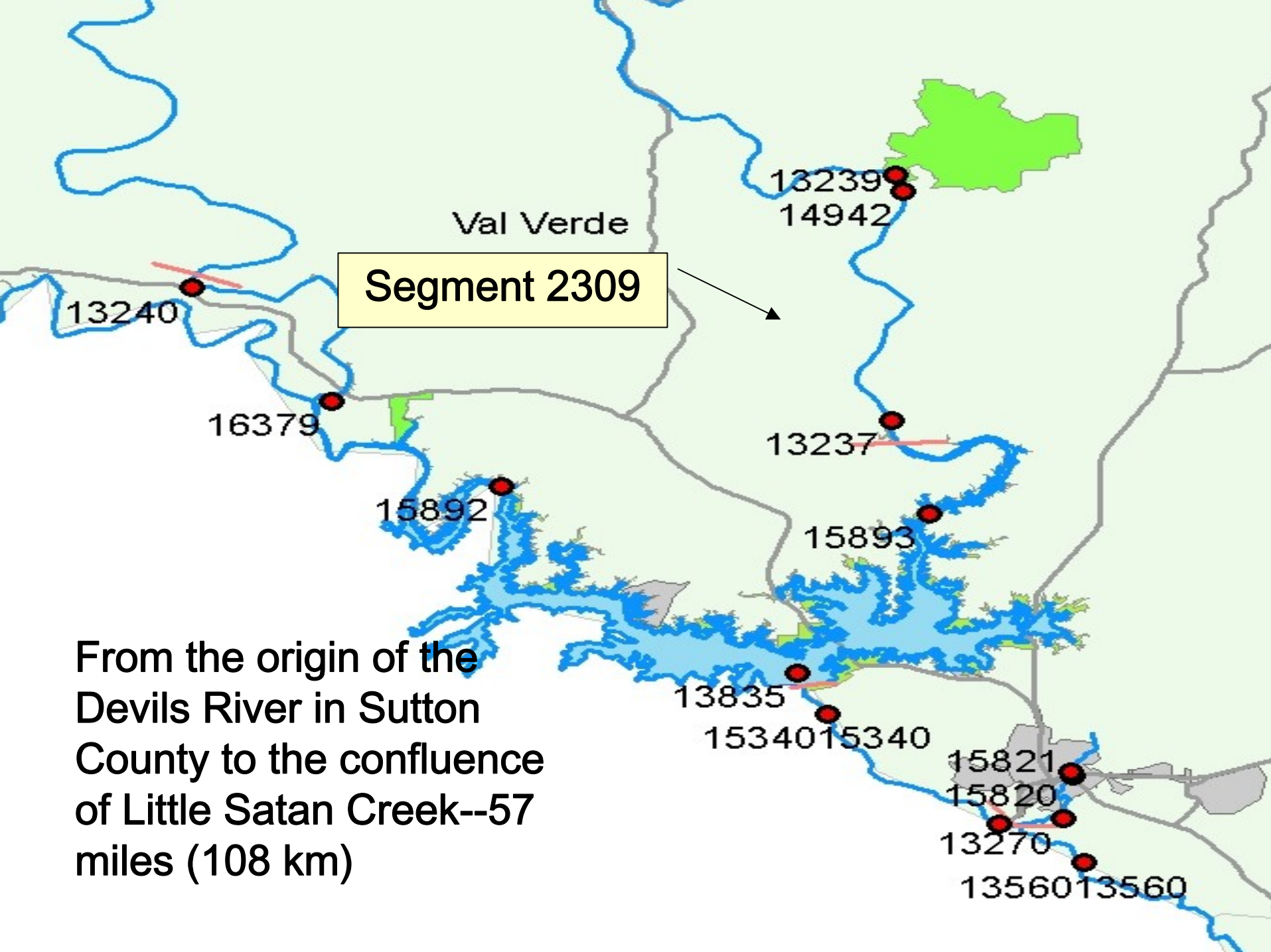
TDS mg/L for Station No. 13835

October 2000 to May 2004

Average = 560 mg/L

Standard = 1500 mg/L





Segment 2309

From the origin of the
Devils River in Sutton
County to the confluence
of Little Satan Creek--57
miles (108 km)

Designated Uses for Segment 2309

- High aquatic life
- Public water supply
- Fish consumption
- Contact recreation

Few impactors
Low TDS

Segment 2309

Station No. 14942
Dolan Springs
100 yds upstream of the
confluence with Devils
River



Segment 2309

Station No. 13239
1.7 km upstream of
Dolan Creek



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Segment 2309

Station No.
13237
Pafford Crossing
near Comstock



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So how's the water?

It depends on:

- River segment
- Seasonal flow
- Proximity to population centers

Issues to monitor:

- Bacteria
- Salinity



Data Locations


- **Basin Highlights Report**
- **IBWC website**
- **TCEQ website**

www.ibwc.state.gov/ CRP/monstats.htm


Clean Rivers Program - IBWC - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Reload Home Search Favorites Media Print Copy Paste Address http://www.ibwc.state.gov/CRP/monstats.htm# Go



International Boundary and Water Commission
Clean Rivers Program
Water Quality Monitoring Data



Study Area Calendar Data Publications Links Contacts Participation Home

Below is a list by segment of monitoring stations in the Rio Grande basin. Click on the station ID number to download an Excel format file that contains all of the available water quality data for that station from 1995 to present.

For a PDF file describing the monitoring parameters, [click here](#)

For a table displaying the laboratory measurement performance specifications, [click here](#)

For the FY2006 monitoring schedule for any basin in Texas [CLICK HERE](#) and then select your basin of choice from the map. The Rio Grande Basin is Basin 23

For dissolved metals data, [click here](#) for a single Excel file containing all of the data that we have for the entire basin by station ID.

Segment 2301 - Rio Grande Tidal

Error on page.

Start Internet 01:53 PM

www.tceq.state.tx.us/ compliance/monitoring/ crp/data/storet.html

The screenshot shows a web browser window with the title "Sampling Data Query, Surface Water Quality Monitoring - Texas Commission on Environ...". The address bar shows the URL "http://www.tceq.state.tx.us/compliance/monitoring/crp/data/samplequery.html". The page features the TCEQ logo and a banner image of a lake. A "SITE SEARCH:" box with a "Go" button is present. A "SUBJECT INDEX" section lists links for "Air", "Water", and "Waste", with "Water" being the active selection. A "Site Navigation" menu on the left lists various categories like "Rules, Policy & Legislation", "Permits, Licenses & Registrations", "Compliance, Enforcement & Cleanups", "Drinking Water & Water Availability", "Reporting", "Environmental Quality", "Assistance, Education & Participation", "Pollution Prevention & Recycling", "Contracts, Funding & Fees", and "TCEQ Home". The main content area is titled "Sampling Data Query, Surface Water Quality Monitoring" and includes a "BACK TO: Water Quality Management" link. It explains that using the data files requires knowledge of file structures and protocols, and provides contact information for the Data Clearinghouse. It also mentions that the data is available from 01/01/1968 to the present and is updated weekly. A section titled "The following documents explain the structure of the files available for download." lists a "RESULT file structure" link. On the right, a "RELATED LINKS:" section includes links for "Surface Water Quality Viewer", "Sampling Stations: Surface Water Quality", and "Texas Clean Rivers Program: An Introduction". The browser's taskbar at the bottom shows the Start button, several open applications, and the system clock displaying 03:04 PM.

Sampling Data Query, Surface Water Quality Monitoring - Texas Commission on Environ...

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites Media Print Mail News RSS Feeds

Address <http://www.tceq.state.tx.us/compliance/monitoring/crp/data/samplequery.html> Go

TCEQ TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

SITE SEARCH:
please enter search phrase

SUBJECT INDEX
> Air > **Water** > Waste
> Search TCEQ Data
> Agency Organization Map

Site Navigation [BACK TO: Water Quality Management](#) >> Questions or Comments: crp@tceq.state.tx.us

- Rules, Policy & Legislation
- Permits, Licenses & Registrations
- Compliance, Enforcement & Cleanups
- Drinking Water & Water Availability
- Reporting
- Environmental Quality
- Assistance, Education & Participation
- Pollution Prevention & Recycling
- Contracts, Funding & Fees
- TCEQ Home
- About TCEQ

Sampling Data Query, Surface Water Quality Monitoring

Use of the data files provided below requires a certain knowledge of the file structures and protocols of the state's surface water quality monitoring program.

If you want to obtain surface water quality data on specific water bodies in report format, please call the TCEQ's Data Clearinghouse at 512/239-DATA.

There are two files associated with the data. The sampling event data file (EVENT file) provides the station ID, sample date and time, sample depth, and the entity that did the sampling. The result data file (RESULT file) provides the monitoring parameter (STORET) code and measurement information.

The data is available from 01/01/1968 to the present, and is updated weekly.

The following documents explain the structure of the files available for download.

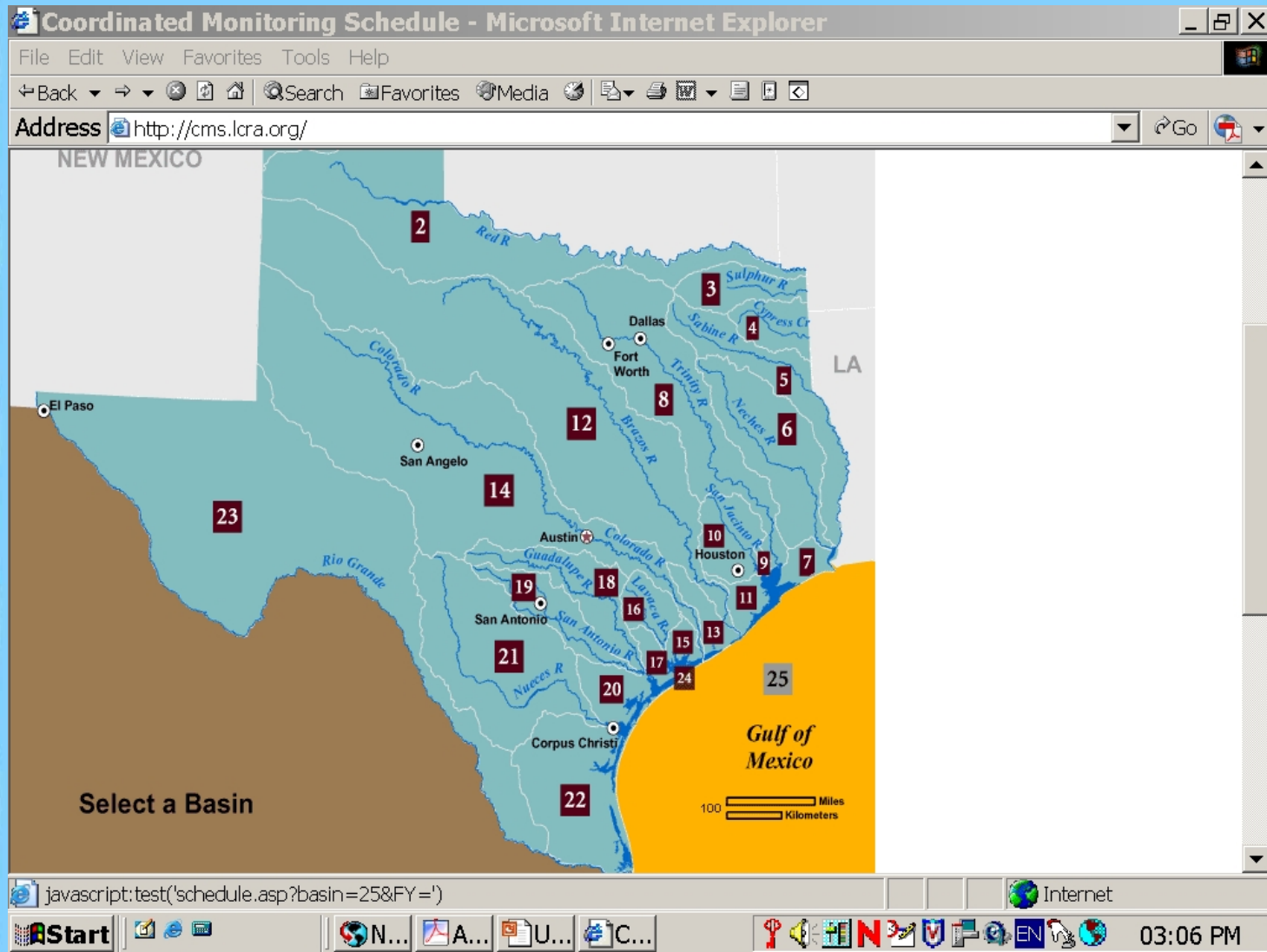
- RESULT file structure

RELATED LINKS:

- [Surface Water Quality Viewer](#)
- [Sampling Stations: Surface Water Quality](#)
- [Texas Clean Rivers Program: An Introduction](#)

Start No... Ad... Up... Sa... Internet 03:04 PM

<http://cms.lcra.org/>



http://www.tceq.state.tx.us/compliance/monitoring/water/quality/data/wqm/swqm_realtime_swf.html

The screenshot shows a web browser window with the title "Continuous Water Quality Monitoring Stations and Data (Flash Map) - Texas Commission ...". The address bar displays the URL: http://www.tceq.state.tx.us/compliance/monitoring/water/quality/data/wqm/swqm_realtime_swf.html.

The page header features the TCEQ logo and the text "TEXAS COMMISSION ON ENVIRONMENTAL QUALITY". A "SITE SEARCH:" box is present with a search input field and a "Go" button. Below it is a "SUBJECT INDEX" with links for "Air", "Water", and "Waste", and further links for "Search TCEQ Data" and "Agency Organization Map".

The "Site Navigation" section on the left lists various links: Rules, Policy & Legislation; Permits, Licenses & Registrations; Compliance, Enforcement & Cleanups; Drinking Water & Water Availability; Reporting; Environmental Quality; Assistance, Education & Participation; Pollution Prevention & Recycling; Contracts, Funding & Fees; TCEQ Home; and About TCEQ.

The main content area is titled "Continuous Water Quality Monitoring Stations and Data (Flash Map)". It includes a "BACK TO:" link for "Surface Water Quality Data and Reports" and a link for "Questions or Comments: monops@tceq.state.tx.us".

Two bullet points are listed:

- [See Continuous Water Quality Station Information and Data](#)
- [Annual Summary Reports](#)

A paragraph explains: "The TCEQ continuously monitors water quality parameters in real-time at four watersheds in Texas. 'Real-time' means that the data collected in the field is reported almost simultaneously to the TCEQ, so the agency knows almost immediately about changes in surface water quality in critical watersheds."

Below this, it states: "Currently active monitoring station locations and parameters collected:"

- **Beals Creek and Colorado River:** Two sites in the watersheds since November 2004 have collected temperature and conductivity.
- **Bosque and Leon Rivers:** Four sites in the watersheds since June 2001 have collected dissolved oxygen, pH, temperature and conductivity. Also, since the summer of 2004, these stations have collected information on turbidity and plant nutrients, ammonia, nitrate, and phosphorus.
- **Caddo Lake:** Two stations since October 2003 have collected dissolved oxygen, pH, temperature, conductivity and weather.
- **Lake Austin:** Two stations from June 2002 to July 2003 collected dissolved oxygen, specific conductance, pH, and temperature.

The bottom of the browser window shows the taskbar with the Start button, several open applications (No..., Ma..., Ma..., Co...), and the system clock displaying 07:59 AM.

Data Locations

<http://www.ibwc.state.gov/CRP/monstats.htm>

Segment-by-segment list of monitoring stations in the Rio Grande basin

2. <http://www.tceq.state.tx.us/compliance/monitoring/crp/data/storet.html>

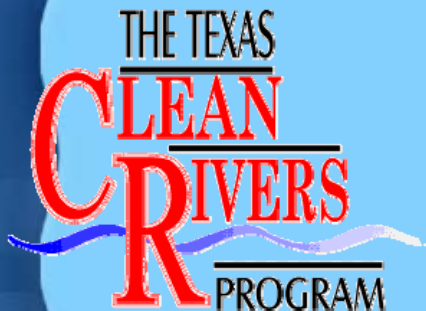
Monitoring Parameter Descriptions, Surface Water Quality Monitoring

3. <http://cms.lcra.org/>

Interactive database with more than 1,800 sites monitored by 59 agencies in TX

4. http://www.tceq.state.tx.us/compliance/monitoring/water/quality/data/wqm/swqm_realtime_swf.html

Continuous Water Quality Monitoring Stations and Data in real-time at 4 watersheds in Texas, including the Rio Grande



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The background of the slide is a photograph of an outdoor water sampling site. A vertical, light-colored pipe or tube is visible, partially filled with a yellowish-brown liquid. The pipe is surrounded by green grass and some dry, brownish vegetation. The lighting suggests it's daytime.

2006-2007 Monitoring Schedule

- Dropping metals analysis to focus on potential organics pollution
- Maintaining current monitoring sites
- Completing special studies

USIBWC-CRP

Quality Assurance Goals

1. Contract with laboratory for FY2007 that is NELAC (National Environmental Laboratory Accreditation Conference) certified
2. Speed up and strengthen the data collection process
 - Meet quality assurance goals
 - Identify errors earlier
 - Quicker turnaround for getting data to the public

Texas Water Monitoring Council

Meeting Announcement



The 2006 (Sixth) Session of the Texas Water Monitoring Congress

Join us in Austin, Texas!
for The 2006
Texas Water Monitoring Congress
September 13-15, 2006

"Connecting the Dots"
Texas Water Monitoring Congress
Public Outreach Symposium
Tuesday, September 12, 2006
9:00am-4:00pm

The Commons- University of Texas, Austin



Texas Watch is a joint partnership of the TCEQ, the U.S. Environmental Protection Agency, and Texas State University - San Marcos, with the mission of expanding understanding and awareness of water quality and NPS issues across Texas. Through education, data collection, and community action, Texas Watch facilitates environmental stewardship by empowering a statewide network of concerned volunteers and partners in a collaborative effort to promote a healthy and safe environment.

Positive and productive communication between water resource managers and the public is widely acknowledged as one of the keys to protecting and improving water quality. This meeting, offered as a pre-conference symposium of the 2006 Texas Water Monitoring Congress, is the second in a series known as "Connecting the Dots", provides a forum for resolving gaps in communication between the public and local, state and federal water resource programs. The 2005 "Connecting the Dots" meeting recommended several initiatives to enhance water resource management programs' abilities to conduct enforcement, permitting, and education activities as follows:

- Improve tracking and reporting of repeat violators
- Create a central clearinghouse to guide citizens through the enforcement and response resources at environmental agencies
- Develop "cradle to grave" oversight of the permitting process
- Require developers to post a bond prior to receiving permits
- Require training of real estate agents, City/County Planners, and developers in the relevant laws and regulations as well as the cost benefits of environmentally "friendly" development.

This year's meeting features presentations on these recommendations as well as panel discussions to identify potential strategies for implementing them.

Who Should Attend? This meeting is open to the general public with a special invitation extended to both individuals who attended the 2005 "Connecting the Dots" meeting and participants in the 2006 Texas Water Monitoring Congress.

Agenda: Visit <http://www.texaswatch.geo.txstate.edu/>

Meeting Location: The Commons Center at the J.J. Jake Pickle Research Campus of the University of Texas at Austin. For map and directions: <http://www.utexas.edu/facilities/commons/attendees.html>

Registration: Please respond on or before Wednesday, September 6, by contacting Texas Watch: phone- 877/506-1401 or email- tw05@txstate.edu. We strongly encourage all participants at this meeting to attend the Texas Water Monitoring Congress. You may register for this meeting at: <http://www.txwmc.org/>

Lodging: <http://www.utexas.edu/facilities/commons/attendees.html>

Meals: Lunch is provided

Contact Information

Volunteers are needed to work on the preparation and planning of the Congress. If you are interested in either volunteering, being an exhibitor, or require further information please contact Robert Bradley at Robert.Bradley@txwin.net or 512-936-0870.

For further information or if you have suggestions for the Congress please contact:

Mr. Robert Bradley, Executive Secretary
Texas Water Monitoring Council
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512-936-0870
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Texas Water Monitoring Council

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Questions?

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